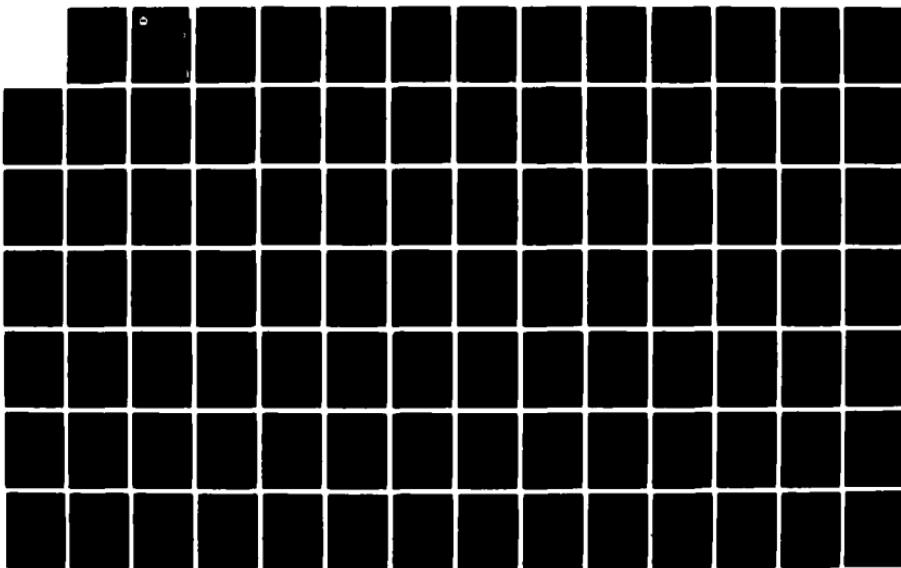


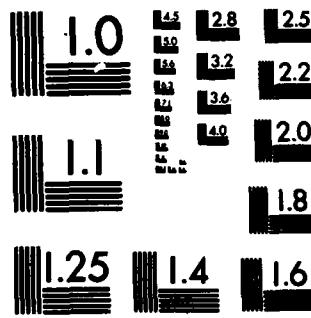
AD-A124 425 BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS NUMBER 54  
112  
JULY-AUGUST 1981(U) DEFENSE INTELLIGENCE AGENCY  
WASHINGTON DC DIRECTORATE FOR SCI... DEC 82

UNCLASSIFIED DIA-DST-2700Z-005-82

F/G 5/2\*

NL





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

DA E24425



DEFENSE  
INTELLIGENCE  
AGENCY

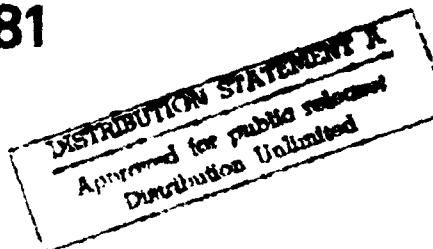
DST-27002-005-02

102

RTIC  
FEB 14 1983  
H

## Bibliography of Soviet Laser Developments (U)

July – August 1981



DECEMBER 1982

83 02 014212

RTIC FILE COPY

**BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS**

**No. 54**

**JULY - AUGUST 1981**

**Date of Report**

**October 18, 1982**

**Vice Director for Foreign Intelligence  
Defense Intelligence Agency**

**This document was prepared for the Defense Intelligence Agency under  
an intragovernment agreement. It is intended to facilitate access of  
government researchers to Soviet laser literature.**

**Comments should be addressed to the Defense Intelligence Agency,  
Directorate for Scientific and technical Intelligence, ATTN: DT-1A.**

**Approved for public release; distribution unlimited**

## UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER  DST-2700Z-005-82	2. GOVT ACCESSION NO.  90-A124425	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle)  BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS, No. 54 JULY - AUGUST 1981		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s)		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Defense Intelligence Agency Directorate for Scientific and Technical Intelligence, ATTN: DT-1A		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE October 18, 1982
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 128
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		16. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited		
17. Distribution Statement (of the abstract entered in Block 20, if different from report)		
18. Supplementary Notes		
19. KEY WORDS Solid State Lasers, Liquid Lasers, Gas Lasers, Chemical Lasers, Laser Components, Nonlinear Optics, Spectroscopy of Laser Materials, Ultrashort Pulse Generation, Free Electron Lasers, X-Ray Lasers, Gammas Lasers, Laser Theory, Laser Biological Effects, Laser Communications, Laser Beam Propagation, Laser Computer Technology, Holography, Laser Chemical Effects, Laser Parameters, Laser Measurement Applications, Laser-Excited Optical Effects, Laser Spectroscopy, Laser Beam-Target Interaction, Laser Plasma		
20. ABSTRACT This is the Soviet Laser Bibliography for July-August 1981, and is No. 54 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; laser spectroscopy; beam-target interaction; and plasma generation and diagnostics.		

### Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is July-August 1981, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are also included. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

Requester For	
DTIC GREAT	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
UNCLASSIFIED	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
DTIC	Avail and/or
REF ID: A62507	Dist Special

A circular stamp is attached to the left of the form, containing the text: DTIC, REF ID: A62507, and a small circled '0'.

SOVIET LASER BIBLIOGRAPHY, JULY - AUGUST 1981

TABLE OF CONTENTS

I. BASIC RESEARCH

A. Solid State Lasers

1. Crystal: Ruby .....	1
2. Crystal: Rare-Earth Activated	
a. Nd <sup>3+</sup> .....	1
b. Eu <sup>3+</sup> .....	2
c. Dy <sup>2+</sup> .....	2
3. Crystal: Miscellaneous .....	2
4. Semiconductor: Simple Junction	
a. CdS .....	2
b. PbS .....	3
c. PbTe .....	3
5. Semiconductor: Mixed Junction .....	---
6. Semiconductor: Heterojunction .....	3
7. Semiconductor: Theory .....	4
8. Glass: Nd .....	5
9. Glass: Miscellaneous .....	6

B. Liquid Lasers

1. Organic Dyes

a. Rhodamine .....	7
b. Coumarin .....	8
c. Miscellaneous Dyes .....	8

107 not selected

1420 Gas Lasers

2000 Simple Mixtures

a. He-Ne .....	10
b. He-Xe .....	11

<b>2. Molecular Beam and Ion</b>	
a. CO <sub>2</sub> .....	12
b. CO .....	14
c. N <sub>2</sub> .....	14
d. Submillimeter .....	15
e. Metal Vapor .....	15
f. Gasdynamic .....	16
<b>3. Excimer .....</b>	<b>18</b>
<b>4. Theory .....</b>	<b>18</b>
<b>D. Chemical Lasers</b>	
1. F <sub>2</sub> +H <sub>2</sub> (D <sub>2</sub> ) .....	20
2. Photodissociative .....	21
3. Transfer .....	---
4. SF <sub>6</sub> +H <sub>2</sub> +He .....	21
<b>E. Components</b>	
1. Resonators	
a. Design and Performance .....	21
b. Mode Kinetics .....	22
2. Pump Sources .....	22
3. Deflectors .....	23
4. Diffraction Gratings .....	23
5. Focusers .....	24
6. Amplifiers .....	24
7. Filters .....	24
8. Beam Splitters .....	25
9. Mirrors .....	25
10. Detectors .....	25
11. Modulators .....	27

<b>F. Nonlinear Optics</b>	
1. Frequency Conversion .....	30
2. Parametric Processes .....	32
3. Stimulated Scattering	
a. Raman .....	32
b. Brillouin .....	33
c. Miscellaneous Scattering .....	34
4. Self-focusing .....	34
5. Acoustic Interaction .....	34
6. General Theory .....	35
<b>G. Spectroscopy of Laser Materials</b>	40
<b>H. Ultrashort Pulse Generation</b>	41
<b>J. Crystal Growing</b>	---
<b>K. Theoretical Aspects of Advanced Lasers</b>	42
<b>L. General Laser Theory</b>	43
<b>II. LASER APPLICATIONS</b>	
<b>A. Biological Effects</b>	46
<b>B. Communications Systems</b>	48
<b>C. Beam Propagation</b>	
1. In the Atmosphere .....	51
2. In Liquids .....	56
3. Theory .....	57
<b>D. Computer Technology</b>	58
<b>E. Holography</b>	60
<b>F. Laser-Induced Chemical Reactions</b>	63
<b>G. Measurement of Laser Parameters</b>	66

<b>H. Laser Measurement Applications</b>	
1. Direct Measurement by Laser .....	68
2. Laser-Excited Optical Effects .....	81
3. Laser Spectroscopy .....	86
<b>J. Beam-Target Interaction</b>	
1. Metal Targets .....	95
2. Dielectric Targets .....	97
3. Semiconductor Targets .....	98
4. Miscellaneous Studies .....	99
<b>K. Plasma Generation and Diagnostics</b> .....	100
<b>III. MONOGRAPHS, BOOKS, CONFERENCE PROCEEDINGS</b> .....	103
<b>IV. SOURCE ABBREVIATIONS</b> .....	109
<b>V. AUTHOR AFFILIATIONS</b> .....	114
<b>VI. AUTHOR INDEX</b> .....	119

## I. BASIC RESEARCH

### A. SOLID STATE LASERS

#### 1. Crystal: Ruby

1. Bedilov, M.R., Kh.B. Beysembayeva, and R. Saidov (85). Effect of reactor and gamma radiation on the operation of a ruby laser. UFZh, no. 7, 1981, 1091-1094.
2. Janusz, Cz., and A. Niklas (NS). Effect of imperfections on thermoluminescence and lasing in ruby crystals. Opt app, no. 4, 1980, 471-478. (RZhF, 7/81, 7D1366)

#### 2. Crystal: Rare-Earth Activated

- a. Nd<sup>3+</sup>
3. Batovrin, V.K., and V.K. Novokreshchenov (161). Mode lock stability in a YAG laser. ZhTF, no. 7, 1981, 1535-1537.
4. Bedilov, M.R., and U. Egamov (85). Effect of radiation defects on the lasing characteristics of solid state lasers. KE, no. 7, 1981, 1603-1606.
5. Skorobogatov, B.S., A.I. Usoskin, and Zh.I. Klitsova (188). Angular characteristics of superluminescent radiation in YAG:Nd crystals. Sb 1, 69-70. (RZhF, 7/81, 7D1351)

b. Eu<sup>3+</sup>

6. Vlasenko, N.A., L.F. Gudymenko, Z.L. Denisova, M.P. Lisitsa, V.S. Khomchenko, and M.M. Chumachkova (6). Study on electrically-excited CdF<sub>2</sub>-Eu<sup>3+</sup> thin films as an active element for a laser. Sb 2, 24-33.

c. Dy<sup>2+</sup>

7. Astashkina, Ye.V., A.S. Mikhaylov, and A.V. Tolstopyatenco (2). Noise-induced instability in a Lorentz model. IVUZ Radiofiz, no. 8, 1981, 1035-1037.

3. Crystal: Miscellaneous

8. Aduyev, B.P., D.I. Vaysburd, and V.A. Moskalev (197). Production and conversion of F<sub>2</sub>, F<sub>2</sub><sup>+</sup> and F<sub>2</sub><sup>-</sup> centers in LiF crystals under pulsed irradiation by dense e-beams. ZhTF P, no. 13, 1981, 791-794.

9. Sevast'yanov, B.K., Yu.L. Remigaylo, V.P. Orekhova, V.N. Matrosov, and G.V. Bukin (13,206). Tunable lasing and spectroscopic characteristics of alexandrite. IAN Fiz, no. 8, 1981, 1429-1434.

4. Semiconductor: Simple Junction

a. CdS

10. Kovalenko, V.A., I.V. Kryukova, and S.P. Prokof'yeva (1). Spectral and time characteristics of radiation from cadmium sulfide crystals. KE, no. 8, 1981, 1790-1796.

b. PbS

11. Dietl, M., M. Gottschalk, Z. Colacki, M. Gorska, A. Jedrzejczak, L. Kowalczyk, and A. Szczerbakow (NS). PbS injection laser.  
Sb 3, 125-128. (RZhF, 8/81, 8D1236)

c. PbTe

12. Aleksandrov, O.V., Yu.I. Gorina, G.A. Kalyuzhnaya, K.V. Kiseleva, S.N. Prusenkov (1), and Buy-Tkhi-N'i (Vietnamese). Effect of silver impurities on the electrical properties of lead telluride.  
KSpF, no. 7, 1981, 35-41.

5. Semiconductor: Mixed Junction

6. Semiconductor: Heterojunction

13. Aarik, Ya.A., L.M. Dolginov, L.V. Druzhinina, P.G. Yeliseyev, P.A. Lyuk, M.G. Mil'vidskiy, B.N. Sverdlov, and Ya.K. Fridental (0). Epitaxial AlGaAsSb-GaSb(AlGaSb) heterostructures for injection lasers. Kristall und Technik, no. 11, 1980, 1311-1316. (RZhRadiot, 8/81, 8Ye87)

14. Alaverdyan, S.A., P.G. Yeliseyev, N.D. Zhukov, A.I. Popov, I.A. Skopin, and V.I. Shveykin (1). Radiation characteristics of an injection laser with a zigzag-shaped mesastripe heterostructure based on AlGaAs/GaAs. KE, no. 7, 1981, 1565-1567.

15. Baranov, V.M., V.S. Ivanov, V.I. Irkha, A.A. Ptashchenko, B.M. Stepanov, and V.A. Chapnin (0). Role of inhomogeneities at p-n junctions in the degradation of LED's based on InGaAsP. ZhPS, v. 35, no. 2, 1981, 338-343.
16. Kurbatov, A.L., M.V. Shubin, P.M. Starik, A.D. Britov, and N.D. Polchkova (0). Tunable injection lasers based on lead chalcogenide solid solutions. Sb 4, 200-202. (RZhF, 7/81, 7D1383)
17. Rammo, I., V. Babson, and Yu. Khaller (0). Dependence of the interval in a GaAs-AlGaAs heterolaser on the parameters of the resonator. IAN Est, no. 1, 1981, 22-28. (RZhF, 7/81, 7D1370)
18. Ryvkin, B.S. (4). Volt-ampere drop-off characteristics and optical bistability of an optical resonator element from the Franz-Keldysh effect. FTP, no. 7, 1981, 1380-1384.
19. Voronin, V.F., N.D. Zhukov, V.K. Kononenko, G.I. Ryabtsev, and S.A. Sosnovskiy (0). Formation defects in the active region of heterolasers and change in internal parameters. ZhPS, v. 35, no. 2, 1981, 272-279.

#### 7. Semiconductor: Theory

20. Gershenzon, Ye.M., V.M. Kalygina, B.I. Levit, and B.N. Tumanov (464). Relaxation oscillation resonance in autodyne oscillators. IVUZ Radiofiz, no. 8, 1981, 1028-1034.

21. Pozhela, Yu.K. (50). Plasma in semiconductors, and instabilities in the shortwave microwave region. Lit fiz sb, no. 4, 1981, 4-21.
22. Torchinskaya, T.V., and M.K. Sheynkman (6). Processes for conversion of centers and degradation of parameters in semiconductor lasers. Sb 2, 75-90.

8. Glass: Nd

23. Avanesov, A.G., Yu.K. Voron'ko, B.I. Denker, G.V. Maksimova, V.V. Osiko, S.S. Pirumov, and I.A. Shcherbakov (1). Study on the mechanism for interaction of chromium and neodymium ions in phosphate glasses. KE, no. 7, 1981, 1442-1450.
24. Dzhibladze, M.I., B.S. Lezhava, Z.G. Esiashvili, and R.A. Petrenko (0). Effect of temperature on the lasing threshold of a neodymium fiber optic laser. AN GruzSSR. Soobshcheniye, v. 104, no. 3, 1981, 581-584.
25. Dzhibladze, M.I., Z.G. Esiashvili, B.S. Lezhava, E.Sh. Teplitskiy, and G.G. Mshvelidze (40). Lasing kinetics of a fiber optic laser operating in periodic giant pulses. IAN Fiz, no. 8, 1981, 1435-1442.
26. Gratsianov, K.V., B.S. Guba, B.G. Malinin, D.S. Prilezhayev, O.B. Raba, B.M. Sedov, and A.I. Stepanov (0). Study on the effect of frequency drift on the efficiency of a laser amplifier. OIS, v. 51, no. 1, 1981, 162-166.

27. Kryzhanovskiy, V.I., V.A. Serebryakov, and A.A. Chertkov (0). Nd:glass laser with controlled pulse shape and length. KE, no. 8, 1981, 1839-1842.
28. Lunter, S.G., A.N. Mironov, and Yu.K. Fedorov (0). Method for separating various processes of luminescence quenching in glasses with high concentrations of rare earth dopants. FiKhS, no. 4, 1981, 439-442.

#### 9. Glass: Miscellaneous

29. Denker, B.I., N.N. Il'ichev, G.V. Maksimova, A.A. Malyutin, V.V. Osiko, and P.P. Pashinin (1). Efficiency of an Li-Nd-La phosphate glass laser in the weak pump region. Free lasing. KE, no. 7, 1981, 1598-1601.
30. Gapontsev, V.P., A.K. Gromov, V.B. Kravchenko, V.M. Kozyukov, S.M. Matytsin, Yu.Ye. Sverchkov, and U.Ya. Sedmalis (15). Process of dissipation and sensitization of electron excitation energy in erbium laser glasses. KE, no. 8, 1981, 1742-1745.
31. Mak, A.A., V.A. Serebryakov, and V.A. Fromzel' (0). Method for counteracting self-focusing in solid state lasers. KE, no. 7, 1981, 1461-1467.

32. Vodop'yanov, K.L., B.I. Denker, N.N. Il'ichev, I. Kertesz, A.A. Malyutin, V.V. Osiko, P.P. Pashinin, and I. Cigany (1) (Russian transliteration of Hungarian names: I. Kertes, I. Tsigan'). Using concentrated Li-Nd-La phosphate glass in Q-switched lasers. KE, no. 7, 1981, 1595-1598.

B. LIQUID LASERS

1. Organic Dyes

a. Rhodamine

33. Aristov, A.V., and V.S. Shevandin (0). Effect of optical quenching of fluorescence on stimulated emission from rhodamine 6G solutions. OiS, v. 51, no. 1, 110-114.

34. Krachenko, V.I., and A.Ya. Litvinenko (5). Spectral-time and energy characteristics of a copper vapor - rhodamine 6G laser system. Sb 2, 3-12.

35. Pikayev, A.K., L.I. Kartasheva, N.S. Vinogradova, and V.V. Ryl'kov (287). Pulsed radiolysis of rhodamine dye solutions. Part 2. Ethanol solutions of rhodamine 6G. KhVE, no. 4, 1981, 312-317.

36. Prishchepov, A.S., Z.B. Perekalina, and V.R. Sender (0). Study on the structural organization of dyes in active laser media. ZhPS, v. 35, no. 2, 1981, 257-260.

37. Spiro, A.G., B.S. Neporent, B.D. Faynberg, and V.B. Shilov (0). Secondary emission from dye solutions under laser excitation. ZhPS, v. 35, no. 1, 1981, 52-59.

b. Coumarin

38. Konefal, Z., and J. Szczepanski (NS). Flashlamp-excited tuned dye laser. Opt app, no. 4, 1980, 493-496. (RZhF, 8/81, 8D1202)

c. Miscellaneous Dyes

39. Barkova, L.A., V.V. Gruzinskiy, V.I. Danilova, K.M. Degtyarenko, T.N. Kopylova, and A.L. Kuznetsov (3). Lasing in the UV from complex molecular vapors. KE, no. 8, 1981, 1728-1733.

40. Bazyl', O.K., G.V. Mayyer, T.N. Kopylova, V.I. Danilova, and V.K. Chaykovskiy (0). Theoretical and experimental study on lasing from phenylethynyl substitutes for naphthalene. ZhPS, v. 35, no. 2, 1981, 261-267.

41. Bondarchuk, V.N., V.S. Mezen, P.I. Myshalov, A.N. Rubinov, and T.Sh. Efendihev (3,638,448). The Gnom-2 organic dye laser with distributed feedback. Sb 5, 18-19.

42. Denisov, L.K., Yu.M. Udachin, A.M. Lantsov, G.P. Tokmakov, N.S. Patalakha, L.V. Chursinova, and I.I. Grandberg (0). Lasing characteristics of 1,4-bis(n-acylpyrazolinyl-3) and 1,4-bis-(n-acylpyrazolinyl) benzole solutions. ZhPS, v. 35, no. 2, 1981, 358-362.

43. Grintsevich, E.M., S.I. Yeliseyev, P.Ya. Misakov, P.I. Myshalov, and S.V. Nechayev (3,638). The Fialka-2 laser. Sb 5, 20-21.

44. Gruzinskiy, V.V., V.I. Danilova, T.N. Kopylova, V.G. Mayyer, and V.K. Shalayev (3). Theoretical study on the spectral-luminescent properties of complex molecules to determine their lasing capability. KE, no. 8, 1981, 1702-1707.

45. Horvath, Z.Gy., A.V. Kilpio, A.A. Malyutin, and Yu.N. Serdyuchenko (0). Light time-of-flight method for the topological investigation of a two-dimensional "halo" laser. Sb 6, 240-249. (RZhRadiot, 7/81, 7Yel42)

46. Ikorica, Z., N. Konjevic, and B. Loncarevic (NS). Pulsed discharge at atmospheric pressure for dye laser pumping. Fizika [Yugoslavia], no. 4, 1980, 265-273. (RZhF, 7/81, 7D1338)

47. Il'chishin, I.P., A.G. Kleopov, Ye.A. Tikhonov, and M.T. Shpak (5). Stimulated tunable emission from a doped cholesteric liquid crystal. IAN Fiz, no. 8, 1981, 1376-1383.

48. Logunov, O.A., A.V. Startsev, and Yu.Yu. Stoylov (1). POPOP vapor laser with 22 percent efficiency. KE, no. 7, 1981, 1558-1562.

49. Zuyev, V.S., V.P. Kruglenko, O.A. Logunov, M.V. Povstyanoy, A.V. Startsev, and Yu.Yu. Stoylov (1). Imitrines. Part 3. Lasing at the 500 nm band from organic imitrine class dyes in solutions and vapors. KE, no. 7, 1981, 1567-1570.

## 2. Inorganic Liquids

### C. GAS LASERS

#### 1. Simple Mixtures

##### a. He-Ne

50. Bazyleenko, V.A., and Yu.S. Rendel' (2). Intensity fluctuations in multimode gas laser radiation resulting from nonequidistant modes. KE, no. 7, 1981, 1587-1590.

51. Belyayev, A.K., A.Z. Devdariani (12), and V.A. Kruglevskiy (109). Excitation cross-section of Ne(4s,  $^1P_1$ ,  $^3P_0$ ) and Ne(5s,  $^1P_1$ ) states during thermal collisions in He( $^1, ^3S$ )+Ne. Sb 7, 131-142.

52. Danileyko, M.V., and A.P. Nedavniy (5). Narrowing the synchronization band in a laser with nonlinear absorption. ZhTF P, no. 14, 1981, 867-871.

53. Gonchukov, S.A., V.M. Yermachenko, R.D. Kasumova, V.V. Nikitin, and Ye.D. Protsenko (1). He-Ne laser operating at 0.63  $\mu$ m in two orthogonally polarized modes. Fizicheskiy institut AN SSSR. Preprint, no. 31, 1981, 36 p. (RZhF, 8/81, 8D1161)

54. Gudelev, V.G., and V.M. Yasinskiy (3). He-Ne laser with a phase-anisotropic resonator in a transverse magnetic mode. Institut fiziki AN BSSR. Preprint, no. 239, 1981, 47 p. (RZhF, 8/81, 8D1160)

55. Koltun, V.L., M.V. Kravets, V.G. Leont'yev, V.V. Lipskiy, Ye.Ya. Nadol'skiy, and Ye.P. Ostapchenko (0). Study on power instability of the radiation from an He-Ne laser with a planospherical resonator. KE, no. 8, 1981, 1767-1770.

56. Nikolayenko, A.N. (0). Study on frequency stability in an He-Ne/CH<sub>4</sub> ring laser. OiS, v. 51, no. 2, 1981, 366-368.

57. Pak, P.Ye., V.Ye. Privalov, and Ya.A. Fofanov (0). Stabilizing a helium-neon laser at 0.63 μm without frequency deviation. OiS, v. 51, no. 1, 1981, 10-12.

b. He-Xe

58. Krivoshchekov, G.V., P.F. Kurbatov, V.S. Smirnov, and A.M. Tumaykin (0). Critical parameters and polarization bistability in a laser operating at the <sup>136</sup>Xe5d[3/2]<sub>1</sub><sup>0</sup> - 6p[3/2]<sub>1</sub> transition in weak magnetic fields. ZhTF P, no. 13, 1981, 809-812.

59. Voinov, A.M., L.Ye. Dovbysh, V.N. Krivonosov, S.P. Mel'nikov, I.V. Podmoshenskiy, and A.A. Sinyanskiy (0). Nuclear pumped IR laser based on mixtures of He-Xe and Ar-Xe. ZhTF P, no. 16, 1981, 1016-1020.

## 2. Molecular Beam and Ion

### a. CO<sub>2</sub>

60. Akchurin, G.G., L.A. Mel'nikov, E.M. Rabinovich, and V.V. Tuchin (0).  
Study on the shape of lasing zones in gas lasers with inhomogeneous active media. RiE, no. 7, 1981, 1453-1460.
61. Akhmanov, A.S., and G.A. Polyakov (2). Pulse formation in a CO<sub>2</sub> amplifier with a saturable absorber. IAN Fiz, no. 8, 1981, 1557-1561.
62. Aleynikov, V.S., V.V. Bibikova, L.D. Mamedli, and V.I. Masychev (0).  
Stabilizing the gas filler in a miniature sealed-off CO<sub>2</sub> laser. KE, no. 7, 1981, 1601-1603.
63. Artamonov, A.V. (0). Method for producing the active medium in a fast-flow CO<sub>2</sub> laser. Otkr izobr, no. 27, 1981, 849358.
64. Averin, A.P., N.G. Basov, Ye.P. Glotov, V.A. Danilychev, Yu.S. Leonov, N.N. Sazhina, A.M. Soroka, and V.I. Yugov (1). Plasmochemical processes in the active medium of a c-w electroionization CO<sub>2</sub> laser. ZhTF P, no. 13, 1981, 769-772.
65. Aver'yanov, N.Ye., and Yu.A. Baloshin (0). Numerical analysis of the operation of a nanosecond pulsed molecular amplifier. ZhPS, v. 35, no. 1, 1981, 47-51.
66. Bazarov, Ye.N., G.A. Gerasimov, V.P. Gubin, N.I. Starostin, and V.V. Fomin (15). Spurious amplitude modulation in stabilized CO<sub>2</sub> lasers. KE, no. 7, 1981, 1521-1525.

67. Bertel', I.M., V.O. Petukhov, S.A. Trushin, and V.V. Churakov (3). Generating high-power pulses of radiation in the 11  $\mu\text{m}$  region (01<sup>1</sup><sub>1</sub> - [11<sup>1</sup>0.03<sup>1</sup>0]<sub>1</sub> band) in a TEA CO<sub>2</sub> laser. ZhTF P, no. 13, 1981, 794-797.

68. Bogdanova, V.I., V.S. Kuznetsov, and R.P. Fidel'skaya (247). Self-terminating gas discharge with inhomogeneous gap ionization. Fizika plazmy, no. 4, 1981, 838-841.

69. Doroshenko, V.M., S.I. Kryuchkov, N.N. Kudryavtsev, and S.S. Novikov (67,118). IR radiation from vibrationally nonequilibrium gas mixtures containing CO and CO<sub>2</sub>. TVT, no. 4, 1981, 735-745.

70. Kudryavtsev, N.N., and S.S. Novikov (67). Determining the gain of molecular lasers from the characteristics of incoherent IR radiation. ZhTF, no. 8, 1981, 1714-1716.

71. Remnev, V.B., and F.F. Sizov (6). Stabilization of low-frequency power fluctuations of CO<sub>2</sub> laser radiation. Sb 2, 22-24.

72. Vasil'yev, L.A., M.G. Galushkin, A.M. Seregin, and N.V. Cheburkin (0). Theoretical study on the efficiency of wavefront reversal in an inverted CO<sub>2</sub> gas. IAN Fiz, no. 8, 1981, 1412-1416.

73. Volchenok, V.I., V.N. Komarov, S.Ye. Kupriyanov, V.I. Stukanov, V.N. Ochkin, and N.N. Sobolev (122). Spatial inhomogeneity in the chemical composition of the active media plasma in sealed-off CO<sub>2</sub> lasers. KhVE, no. 4, 1981, 362-364.

b. CO

74. Basov, N.G., Ye.P. Glotov, V.A. Danilychev, A.M. Soroka, B.M. Urin, and V.I. Yugov (1). Evaluating the energy characteristics of an industrial electroionization CO laser with turbocompression cooling. DAN SSSR, v. 259, no. 5, 1981, 1094-1098.
75. Konev, Yu.B., I.V. Kochetov, A.K. Kurnosov, V.G. Pevgov, and A.V. Dem'yanov (74). Study on the characteristics of a gas discharge CO laser lasing on an overtone. Part 1. Steady state operation. I-FZh, no. 2, 1981, 289-294.
76. Masychev, V.I., V.G. Plotnichenko, and V.K. Sysoyev (1). Tunable CO laser. KE, no. 7, 1981, 1540-1550.

c. N<sub>2</sub>

77. Asinovskiy, E.I., L.M. Vasilyak, and Yu.M. Tokunov (74). Effect of oxygen on lasing in a nitrogen laser. TVT, no. 4, 1981, 873-875.
78. Novgorodov, A.M., V.F. Papakin, and A.Yu. Sonin (41). Effect of gaseous impurities on the characteristics of a pulsed discharge in nitrogen. Deposit at VINITI, no. 1478-81, 3 April 1981, 7 p. (RZhF, 8/81, 8G633)
79. Sukhinin, G.I., G.A. Khramov, and R.G. Sharafutdinov (159). Measuring the effective extinction cross-section for N<sub>2</sub><sup>+</sup>(B<sup>2</sup> $\Sigma$ <sub>u</sub><sup>+</sup>, v=0) excited ionic states of nitrogen molecules at temperatures of 5-300 K. ZhTF, no. 8, 1981, 1762-1763.

80. Sulakshin, S.S. (197). Kinetic model of an Ar-N<sub>2</sub> laser with high-current proton beam pumping. IVUZ Fiz, no. 7, 1981, 29-33.

81. Udrea, V.M., and E. Udrea (NS). Nitrogen laser with a plane line for preionization. Patent Romania, no. 70701, 7 Sep 1979. (RZhRadiot, 7/81, 7Ye55)

82. Udrea, V.M., and E. Udrea (NS). Nitrogen laser with a plane line for preionization. Patent Romania, no. 70702, 7 Sep 1979. (RZhRadiot, 7/81, 7Ye56)

d. Submillimeter

83. Shastin, V.N. (426). Feasibility of amplifying submillimeter radiation using cyclotron resonance of weak holes during intraband optical pumping of p-Ge. FTP, no. 8, 1981, 1641-1644.

84. Vlasov, G.K., and S.G. Kalenkov (118). External source of stimulated submillimeter radiation at transitions between exciton levels in crystals. FTT, no. 7, 1981, 2140-2143.

85. Yefremov, V.A., and S.F. Dyubko (34). Amplification in a three-level gas excited by two unidirectional waves. IVUZ Radiofiz, no. 7, 1981, 819-824.

e. Metal Vapor

86. Buzhinskiy, O.I., and M.L. Petrov (0). Efficiency for excitation of laser levels of the copper atom in an electric discharge. KE, no. 8, 1981, 1842-1845.

87. Doronin, V.G., A.N. Korol'kov, S.V. Pis'mennyy, and S.A. Rudelev (0). Study on staged lasing in an He-Cd laser with transverse r-f pumping. ZhPS, v. 35, no. 2, 1981, 252-256.

88. Plekhotkina, G.L. (0). Radiative lifetimes of  $n^2D_j$  ( $n=6-8$ ) excited states in gold atoms. OiS, v. 51, no. 2, 1981, 376-377.

89. Sokolov, A.V., and A.V. Sviridov (0). Copper vapor laser with a transverse discharge. KE, no. 8, 1981, 1686-1696.

f. Gasdynamic

90. Aleksandrov, B.S., G.A. Andronov, V.A. Belavin, B.M. Dymshits, Ya.P. Koretskiy, and V.F. Sharkov (0). Study on the energy and spectral characteristics of the active medium in a CO gasdynamic laser. KE, no. 8, 1981, 1797-1801.

91. Bakanov, D.G., A.A. Vedeneyev, A.Yu. Volkov, A.I. Demin, Ye.M. Kudryavtsev, A.I. Odintsov, V.A. Spazhakin, and A.I. Fedoseyev (1). Gasdynamic laser operating in the 16.4 - 17.2  $\mu\text{m}$  range with thermal pumping at transitions between  $v_1$  and  $v_2$  mode levels of the  $\text{CO}_2$  molecule. KE, no. 7, 1981, 1570-1573.

92. Bakanov, D.G., A.A. Infimovskaya, L.S. Korniyenko, A.I. Odintsov, A.M. Prokhorov, A.I. Fedoseyev, and V.F. Sharkov (0). Lasing in the 16.8 - 17.2  $\mu\text{m}$  region from a gasdynamic  $\text{CO}_2$  laser. ZhTF P, no. 13, 1981, 802-805.

93. Breyev, V.V., A.V. Gubarev, A.V. Kazhidub, A.T. Kukharenko, V.V. Lebedev, and V.P. Panchenko (23). Numerical study on a commercial closed-cycle gasdynamic CO<sub>2</sub> laser. KE, no. 8, 1981, 1656-1662.

94. Didukov, A.I., G.I. Kozlov, and I.K. Selezneva (0). Study on the characteristics of combustion-product gasdynamic lasers with unstable resonators. FGIV, no. 4, 1981, 109-113.

95. Doroshenko, V.M., N.N. Kudryavtsev, and S.S. Novikov (67). Measuring and evaluating the gain and vibrational temperatures in a CO<sub>2</sub> gasdynamic laser. KE, no. 7, 1981, 1476-1484.

96. Kireyev, V.I., and A.S. Voynovskiy (0). Inverse problem of shaping supersonic nozzles and channels using numerical methods. MZhIG, no. 4, 1981, 176.

97. Minin, S.N. (0). Study on planar and axially symmetric flows in gas mixtures with relaxation of vibrational energy in gasdynamic laser nozzles. MZhIG, no. 4, 1981, 175.

98. Pinchukov, V.I. (0). Numerical study on the effect of the shape of the transonic part of a Laval nozzle on the flow of a CO<sub>2</sub>-N<sub>2</sub>-H<sub>2</sub>O-He mixture. FGIV, no. 4, 1981, 100-106.

99. Vedeneyev, A.A., A.Yu. Volkov, A.I. Demin, and Ye.M. Kudryavtsev (0). Effect of impurities of water, hydrogen and helium on the population of vibrational levels in CO<sub>2</sub> under strongly nonequilibrium supersonic cooling conditions. Fizicheskiy institut AN SSSR. Preprint, no. 26, 1981, 24 p. (RZhF, 8/81, 8D1180)

100. Yevtyukhin, N.V. (67). Active media of a CO<sub>2</sub> gasdynamic laser using combustion products of low nitrogen-content fuels. KE, no. 8, 1981, 1846-1849.

### 3. Excimer

101. Grinchenko, B.I., and V.F. Chinnov (74). Relaxation kinetics for e-beam pumping of dense inert gases and the formation of excimer molecules. Fizika plazmy, no. 4, 1981, 852-859.

102. Karlashov, A.V., and O.V. Korshunov (74). Model of a quasi-steady-state "beam" plasma of heavy inert gases. Part 1. General description of the model. TVT, no. 4, 1981, 709-719.

### 4. Theory

103. Achasov, O.V., S.A. Zhdanok, D.S. Ragozin, R.I. Soloukhin, and N.A. Fomin (180). Associative ionization of diatomic molecules from adiabatic expansion in a supersonic flow. ZhETF, v. 81, no. 2, 1981, 550-559.

104. Baryshnikov, F.F., V.S. Lisitsa, and S.A. Sukhin (23). Landau-Ziner type nonlinear effects in the absorption spectra of accelerated atoms. ZhETF, v. 81, no. 2, 1981, 497-505.

105. Bespalov, V.I., and V.V. Ryzhov (466). Inhomogeneity in e-beam ionization of a gas discharge gap. ZhTF, no. 7, 1981, 1403-1408.

106. Buzhinskiy, O.I., V.V. Lopatin, and V.P. Chernenko (579).  
Physical, chemical and electrophysical properties of high-temperature insulation ceramics for chemical-element vapor lasers. KE, no. 8, 1981, 1697-1701.

107. Bystritskiy, V.M., Ya.Ye. Krasik, and S.S. Sulakshin (0). Obtaining high-current carrier ion beams in a tetrode with an indestructible anode for pumping gas lasers. Deposit at VINITI, no. 2534-81, 25 May 1981, 15 p. (RZhF, 8/81, 8D1196)

108. Donin, V.I., S.G. Rautian, G.I. Smirnov, and D.A. Shapiro (75).  
Coulomb broadening of nonlinear resonances in ionic spectra. IAN Fiz, no. 8, 1981, 1496-1499.

109. Dubovik, M.V. (0). Increasing the stability of the radiation characteristics of a pulsed laser operating at atomic transitions in carbon. ZhPS, v. 35, no. 1, 1981, 29-32.

110. Kovtun, V.P. (450). Potential vibrations of an active molecular plasma in an a-c electric field. Fizika plazmy, no. 4, 1981, 916-920.

111. Malov, A.N. (193). Pulsed gas laser. Author's certificate USSR, no. 775802, 30 Oct 1980. (RZhRadiot, 7/81, 7Ye67)

112. Nikolayenko, A.N. (0). Study on frequency shifts in power resonance at the center of the amplification line in a gas ring laser. ZhPS, v. 35, no. 1, 1981, 167-169.

113. Orlov, L.N. (3). Effect of temperature on lasing in IR molecular lasers under stationary optical pumping. Institut fiziki AN BSSR. Preprint, no. 237, 1981, 52 p. (RZhF, 8/81, 8D1194)

114. Orlov, L.N. (0). Effect of temperature on lasing from methyl halide compounds under optical pumping. ZhPS, v. 35, no. 1, 1981, 23-28.

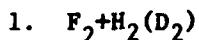
115. Smirnov, G.I., and D.A. Shapiro (75). Theory of ion lasers. Institut avtomatiki i elektrometrii SOAN. Preprint, no. 128, 1981, 28 p. (RZhF, 7/81, 7D1277)

116. Smirnov, G.I., and D.A. Shapiro (75). Nonlinear effects in ion laser radiation. ZhETF, v. 81, no. 2, 1981, 457-467.

117. Vakar, A.K., V.K. Zhivotov, F.F. Karimova, Ye.G. Krasheninnikov, V.D. Rusanov, and A.A. Fridman (0). Measuring the vibrational temperature of molecules in a nonequilibrium plasma. ZhTF P, no. 16, 1981, 996-1001.

118. Vol'nov, M.I., M.A. Gubin, V.V. Nikitin, and D.A. Tyurikov (1). Stabilized gas laser. Otkr izobr, no. 29, 1981, 724037.

D. CHEMICAL LASERS



119. Vasil'yev, G.K., V.I. Gur'yev, and A.O. Koval'skiy (0). Study on lasing and relaxation processes at rotational transitions of HF under pumping by pulsed chemical HF laser radiation. Sb 8, 143-150. (RZhF, 7/81, 7D1319)

## 2. Photodissociative

120. Dolgopolov, Yu.V., S.B. Kormer, S.M. Kulikov, V.M. Murugov, S.N. Pevnyy, A.V. Ryadov, and S.A. Sukharev (0). Dynamic compensation for optical inhomogeneities in an iodine laser. ZhTF, no. 8, 1981, 1764-1765.

121. Pravilov, A.M. (12). Spectroscopy and the initial processes of photolysis of iodides in photodissociation iodine lasers. KE, no. 7, 1981, 1397-1424.

## 3. Transfer

### 4. $SF_6 + H_2 + He$

122. Bondar', Yu.F., S.I. Zavorotnyy, A.L. Ipatov, G.P. Mkheidze, A.A. Ovchinnikov, and A.A. Savin (1). Experiments on obtaining laser radiation from a "Terek-1R". KSpF, no. 8, 1981, 8-12.

## E. COMPONENTS

### 1. Resonators

#### a. Design and Performance

123. Boytsov, V.F., and S.G. Slyusarev (12). Ring resonator with a longitudinally and transversely inhomogeneous medium divided by a diaphragm. Leningradskiy GU. Vestnik, no. 4, 1981, 108-110.

124. Dotsenko, A.V., and Ye.G. Lariontsev (98). Effect of disparity in resonator Q-factors on the interaction of opposed waves in solid-state ring lasers. KE, no. 7, 1981, 1504-1508.

125. Murina, T.A., and N.N. Rozanov (0). Operation of bistable electrooptic devices based on Fabry Perot resonators. ZhTF P, no. 14, 1981, 872-876.

b. Mode Kinetics

126. Doronin, V.G., and V.P. Pipchenko (0). Using off-axis Gaussian beams to describe the radiation from lasers with an offset active resonator. ZhPS, v. 35, no. 1, 1981, 9-16.

127. Silichev, O.O., and A.A. Fomichev (118). Effect of small irregular inhomogeneities on the structure of laser resonator modes. KE, no. 7, 1981, 1584-1587.

2. Pump Sources

128. Barbonie, T., and T. Necsoiu (NS). Integrated electronic synchronizing device for a laser triggered by a rotating prism. Patent Romania, no. 69832, 9 July 1980. (RZhRadiot, 7/81, 7Ye460)

129. Dashuk, P.N., and S.L. Kulakov (29). X-ray radiation from a multichannel grazing spark discharge. ZhTF P, no. 14, 1981, 853-857.

130. Dul'nev, G.N., and S.I. Khankov (30). Thermal characteristics of optical elements in the illumination system of a solid state laser with natural cooling. I-FZh, v. 41, 1981, 295-301.

131. Erdevdi, N.M., Ye.M. Zinevich, and Yu.Yu. Popadinets (0).

Miniature high-power N<sub>2</sub> laser for pumping tunable dye lasers.

ZhPS, v. 35, no. 2, 1981, 220-222.

### 3. Deflectors

132. Boytenko, I.G., and V.P. Red'ko (321). Acoustooptic waveguide deflector. Sb 5, 31-32.

133. Pilipovich, V.A., V.I. Polyakov, and A.I. Konoyko (299). Resolution of a polarization E-O deflector. IAN B, no. 4, 1981, 79-82.

### 4. Diffraction Gratings

134. Braynin, Yu.I., M.N. Sokol'skiy, and Yu.G. Turkevich (7). Optical systems for producing planar holographic diffraction gratings. OMP, no. 7, 1981, 36-38.

135. Konstantinov, V.B., A.F. Rykhlov, Yu.F. Romanov, and A.Yu. Tropchenko (4). Diffraction efficiency of auxiliary structures formed from the recording of refractive volume phase gratings. Fiziko-tehnicheskiy institut AN SSSR. Preprint, no. 699, 1981, 16 p. (RZhF, 8/81, 8D1043)

136. Miler, M. (7). Improving the homogeneity of the diffraction efficiency at the edges of holographic grating surfaces. OMP, no. 8, 1981, 47-49.

137. Nagibina, I.M. (0). Holographic gratings and their properties. Sb 9, pp not given. (RZhF, 7/81, 7D964)

138. Rubanov, A.S., Ye.V. Ivakin, I.P. Petrovich, I.P. Shakhlay, and V.G. Batyukov (3,638). The Dilaks-201 instrument for measuring the lifetime of dynamic diffraction gratings. Sb 5, 30-31.

#### 5. Focusers

139. Poleshchuk, A.G. (75). Device for automatic focusing of luminous radiation. Author's certificate USSR, no. 769319, 7 Oct 1980. (RZhRadiot, 7/81, 7Ye489)

#### 6. Amplifiers

140. Arsenin, V.Ya., A.L. Galkin, and V.V. Korobkin (71). Analysis of some multipass optical amplifier circuits. Institut prikladnoy matematiki AN SSSR. Preprint, no. 14, 1981, 13 p. (RZhF, 8/81, 8D1154)

141. Badziak, J. (NS). Effect of nonlinear losses on the energy extraction from the amplifying medium. Opt app, no. 4, 1980, 327-340. (RZhF, 8/81, 8D1153)

142. Brodov, M.Ye., N.I. Gavrilov, P.I. Ivashkin, V.V. Korobkin, V.M. Ovchinnikov, Yu.A. Pirogov, A.M. Prokhorov, and R.V. Serov (1). Amplifier for laser radiation. Otkr izobr, no. 29, 1981, 711978.

#### 7. Filters

143. Beregulin, Ye.V., P.M. Valov, I.D. Yaroshetskiy, and I.N. Yassiyevich (4). Method for self mode-lock in pulsed IR lasers. Otkr izobr, no. 33, 1981, 762691.

144. Borovkov, O.V., P.V. Burliy, N.K. Zhabitenko, P.P. Il'in, I.Ya. Kucherov, and I.V. Ostrovskiy (0). Study on certain acoustoelectronic devices based on elastic waves in plates (band filter, phase rotator, laser radiation modulator, temperature sensor). Sb 10, 65-66. (RZhRadiot, 8/81, 8Ye305)

#### 8. Beam Splitters

145. Petru, F. (NS). Method for splitting a beam of polarized light in a laser interferometer and system for realizing it. Author's certificate Czechoslovakia, no. 185014, 15 Sep 1980. (RZhRadiot, 7/81, 7Ye486)

146. Rozhdestvenskiy, V.N., and A.B. Khazanov (7). Interference optical beam splitter for the visible and IR ranges. OMP, no. 8, 1981, 41-43.

#### 9. Mirrors

147. Svechnikov, M.B. (7). Optical strength of dielectric mirrors with layers of various optical thicknesses. OMP, no. 7, 1981, 44-46.

148. Yegorov, V.N., E.A. Narusbek, G.I. Yeremeyev, and V.S. Sheshukov (7). Calorimetric measurement of the absorption coefficient for metallic mirrors at 10.6  $\mu\text{m}$ . OMP, no. 7, 1981, 4-6.

#### 10. Detectors

149. Abramochkin, A.I., P.M. Nolle, and A.A. Tikhomirov (0). Photomultiplier with time control of gain. Sb 6, 92-99. (RZhF, 7/81, 7D1005)

150. Ban'ko, G.P., and V.S. Pleshivtsev (494). Resonance amplifier for optical signals. Deposit at GOSINTI, no. 21-81, 8 Apr 1981, 7 p. (RZhRadiot, 8/81, 8Ye299)

151. Baskin, E.M., A.F. Kravchenko, B.S. Lisenker, Yu.Ye. Maronchuk, and A.Yu. Shegay (10). Method for measuring optical fluxes. Otkr izobr, no. 33, 1981, 762661.

152. Buyalo, N.N., T.D. Goryunova, M.V. Senashenko, Yu.P. Timofeyev, and Ye.B. Shelemin (0). Dynamic range for the recording of IR radiation density on ZnS-Cu, Co luminophor screens. ZhPS, v. 35, no. 1, 1981, 71-73.

153. Grosu, N.D. (NS). Using silicon photodetectors in systems for detecting low levels of laser radiation. SCF, no. 1, 1981, 13-27. (RZhF, 8/81, 8D946)

154. Kludzin, V.V., and L.N. Preslenev (0). Coherent memory of radio pulses in acoustooptic delay lines. Sb 11, 54-60. (RZhRadiot, 8/81, 8Ye295)

155. Klyukin, L.M., Ye.N. Koroleva, and M.V. Senashenko (141). Characteristics of temperature-sensitive screens designed for IR photodetectors. KE, no. 8, 1981, 1754-1759.

156. Kolobkov, N.S., G.I. Rukman, B.M. Stepanov, and Ye.B. Shelemin (0). Recording the space-time structure of coherent radiation. Sb 12, 65-70. (RZhRadiot, 8/81, 8Ye294)

157. Konstroffer, L., and E. Grimm (NS). Study on optical detectors in the 1.0 - 1.3  $\mu$ m range. Nachrichtentechnik Elektronik, no. 3, 1981, 107-108, 113, 90, 132. (RZhRadiot, 8/81, 8Ye290)

158. Malygin, A.A., A.N. Penin, and A.V. Sergiyenko (2). Efficient generator of a two-photon field in the visible range. KE, no. 7, 1981, 1563-1564.

159. Pustovalov, T.M., V.I. Stukalov, L.S. Kremenchugskiy, and A.Ya. Shul'ga (5). Multielement pyroelectric detector of radiation. Author's certificate USSR, no. 785659, 7 Dec 1980. (RZhRadiot, 7/71, 7Ye439)

160. Voronkov, V.V., G.I. Voronkova, B.V. Zubov, V.P. Kalinushkin, T.M. Murina, and A.M. Prokhorov (181). Carrier capture by impurity "clouds" in detector germanium. Institut yadernykh issledovaniy AN UkrSSR. Preprint, no. KIYAI-81-11, 1981, 39-40.

161. Zaytsev, M.I. (0). Noise rejection in a multichannel photodetector during detection of pulsed radiation. Sb 13, 7-11. (RZhRadiot, 8/81, 8Ye286)

#### 11. Modulators

162. Bannov, V.Ya. (110). Multichannel piezoconverter for an acoustooptic modulator. Tr 1, 18-21. (RZhRadiot, 7/81, 7Ye247)

163. Berezhinskiy, L.I., A.I. Liptuga, and V.K. Malyutenko (6). Fabry-Perot interferometer: an active Q-switch for a CO<sub>2</sub> laser. Sb 2, 17-22.

164. Bozhevol'nyy, S.I., Ye.M., Zolotov, A.M. Prokhorov, and Ye.A. Shcherbakov (1). Study on an interferometric modulator using channel waveguiding in LiNbO<sub>3</sub>. KE, no. 8, 1981, 1746-1753.

165. Bykovskiy, Yu.A., V.L. Smirnov, and O.I. Tolstopyatov (16). Electrooptic modulation of radiation in thin-film semiconductor waveguides by stationary phase gratings. ZhTF P, no. 15, 1981, 945-949.

166. Gomozov, V.I., E.G. Lamekhov, and B.V. Strukov (0). Device for shaping frequency-modulated signals. Author's certificate USSR, no. 788425, 25 Dec 1980. (RZhRadiot, 7/81, 7Ye248)

167. Gusev, O.B., V.V. Kludzin, S.V. Kulakov, A.M. Semenov, and V.P. Pikarnikov (0). Technical characteristics of acoustic light modulators. Sb 11, 75-81. (RZhRadiot, 8/81, 8Ye119)

168. Gusev, V.A. (110). Thin film acoustooptic modulator. Tr 1, 9-11. (RZhRadiot, 7/81, 7Ye239)

169. Lebedev, S.A., V.N. Kopranenkov, and L.S. Goncharova (0). Optical switch based on organic dyes. ZhTF, no. 8, 1981, 1749-1750.

170. Malov, L.R., and R.I. Mukhtarov (0). Stark modulation of the absorption of CO<sub>2</sub> laser radiation by an ammonia - air mixture. ZhPS, v. 35, no. 1, 1981, 163-166.

171. Mikhaylova, T.P., L.A. Sakayeva, Yu.A. Fedorov, V.I. Bobrik, and A.K. Toropov (129). Stabilization of a Fabry-Perot interferometer passband by laser radiation. PTE, no. 3, 1981, 188-190.
172. Nagayev, A.I., V.N. Parygin, and L.V. Shchekoturov (2). E-beam space-time light modulator with a three-layer target. KE, no. 8, 1981, 1818-1820.
173. Novikov, V.T., and V.N. Sorokovikov (0). Integrated optical light modulator for optical processing of antenna array signals. Sb 14, 39-41. (RZhRadiot, 8/81, 8Yel20)
174. Pozdnyakov, A.Ye. (7). Correcting for thermal distortion in optical systems for transforming laser beams. OMP, no. 8, 1981, 16-19.
175. Shturbin, A.V., V.A. Shalygin, L.Ye. Vorob'yev, I.I. Farbshteyn, A.D. Goletskaya, and V.I. Stafeyev (29). Optical modulator. Otkr izobr, no. 33, 1981, 776180.
176. Stashkevich, A.A. (0). Generalized equivalent circuit for an acoustooptic light modulator as an element in an optical signal processing system. Sb 11, 68-75. (RZhRadiot, 8/81, 8Yel18)
177. Temchenko, V.S., and A.A. Rymov (0). LiTaO<sub>3</sub> 16-channel electrooptic light modulator for parallel processing of antenna array signals. Sb 14, 41-45. (RZhRadiot, 8/81, 8Yel21)
178. Todorov, T.A., and L.P. Nikolova (NS). Optically controlled device for space-time modulation of light. Author's certificate Bulgaria, no. 23705, 30 Nov 1979. (RZhRadiot, 7/81, 7Ye233)

F. NONLINEAR OPTICS

1. Frequency Conversion

179. Apanasevich, P.A., R.G. Zaporozhchenko, V.A. Zaporozhchenko, A.V. Kachinskiy, and I.S. Zakharova (3). Intracavity second harmonic generation in lasers with active mode lock. KE, no. 8, 1981, 1650-1655.

180. Arifzhanov, S.B., R.A. Ganeyev, A.A. Gulamov, E.F. Ibragimov, V.I. Redkorechev, and T. Usmanov (202). Harmonic generation of radiation from a multistage neodymium laser. IAN Fiz, no. 8, 1981, 1389-1397.

181. Azimov, B.S., Yu.N. Karamzin, and A.K. Sukhorukova (2). New effects during parametric up-conversion: nonlinear-dispersive smearing and quasisolitons. IAN Fiz, no. 8, 1981, 1398-1402.

182. Buritskiy, K.S., Ye.M. Zolotov, A.M. Prokhorov, and V.A. Chernykh (1). Optimizing the parameters for second harmonic generation in Ti:LiNbO<sub>3</sub> planar waveguides. KE, no. 8, 1981, 1783-1789.

183. Drobnik, A., J. Walocha, and L. Wolf (Poles). Study on the effect of the optical quality of a KDP crystal on its efficiency of second harmonic generation. KE, no. 7, 1981, 1593-1595.

184. Glushchenko, A.A., B.P. Dovgiy, V.V. Obukhovskiy, and V.L. Strizhevskiy (51). Optical second harmonic generation within a laser resonator, allowing for transverse inhomogeneity of the radiation. Sb 2, 33-39.

185. Kopylov, S.M. (0). Sum frequency generation in a multimode laser radiation field. KE, no. 7, 1981, 1526-1531.

186. Oseledchik, Yu.S. (0). Harmonic generation during multiphoton excitation of two-level systems by a high-power noise field. OiS, v. 51, no. 1, 1981, 48-54.

187. Rayzer, Yu.P. (17). C-w optical discharge in helium: a fixed source of UV at extremely high temperatures. ZhTF P, no. 15, 1981, 938-941.

188. Shcherbov, V.A., and P.K. Nesterov (0). Quasioptical devices for frequency conversion in the submillimeter range. Deposit at VINITI, no. 1156-81, 1981, 12 p. (RZhRadiot, 7/81, 7Ye446)

189. Stapor, A., J. Langer, T. Langer, and B. Krukowska-Fulde(NS). Efficient two- and three-quantum conversion of IR radiation to the visible in CdF<sub>2</sub>:Er,Yb crystals. Sb 3, 120-124. (RZhF, 8/81, 8D1289)

190. Varakin, V.N., and V.M. Gordiyenko (2). Third harmonic generation in ethylene. KE, no. 7, 1981, 1593-1595.

191. Verbovskiy, V.I., and Yu.Ya. Pecherskiy (0). Using nonlinear crystals for frequency conversion of radiation from a c-w tunable F<sub>A</sub>(II) color center laser in a KCl:Li crystal. Sb 8, 159-163. (RZhF, 7/81, 7D1432)

## 2. Parametric Processes

192. Bergner, H., V. Brueckner, and B. Schroeder (East Germans). Frequency dependence of parametric amplification under picosecond pulse conditions. KE, no. 7, 1981, 1580-1582.

193. Kulevskiy, L.A. (0). Parametric oscillator of IR radiation. UFN, v. 134, no. 3, 1981, 535-541.

194. Marunkov, A.G., V.I. Pryalkin, and A.I. Kholodnykh (2). Increasing the efficiency of conversion in pulsed parametric oscillators by the injection of an external signal. KE, no. 7, 1981, 1436-1441.

195. Mishchenko, V.P. (84). Four-photon parametric processes at a degenerate transition in a magnetic field and their use for determining the relaxation constants of a gas. Institut radiofiziki i elektroniki AN UkrSSR. Preprint, no. 161, 1980, 32 p.

196. Myagkov, S.A., and V.N. Sazonov (1). Parametric vibrational excitation in polyatomic molecules by sub-barrier transitions in the energy space. KE, no. 8, 1981, 1760-1766.

## 3. Stimulated Scattering

### a. Raman

197. D'yakov, Yu.Ye., and S.Yu. Nikitin (2). Coherent Raman mixing during the simultaneous excitation of direct and opposed Raman scattering waves. VMU, no. 4, 1981, 81-84.

198. Grasyuk, A.Z., Yu.I. Karev, L.L. Losev, and V.G. Smirnov (1).  
Regenerative Raman amplifier using rotational transitions in orthohydrogen. KE, no. 8, 1981, 1715-1720.

199. Kravtsov, N.V., and N.I. Naumkin (0). Nature of change in the polarizability of a medium during stimulated Raman scattering.  
OIS, v. 51, no. 1, 1981, 190-192.

200. Kuzin, Ye.A. (0). Mode structure of a Stokes wave during stimulated Raman scattering in an optical fiber. ZhTF P, no. 14, 1981, 837-839.

201. Korniyenko, L.S., N.V. Kravtsov, and N.I. Naumkin (98). Effect of intracavity stimulated Raman scattering on the lasing characteristics of a solid state ring laser. ZhTF, no. 8, 1981, 1741-1742.

202. Merten, L., and J. Wenk (NS). Boundary conditions for stimulated Raman effect of a semi-infinite piezoelectric cubic crystal.  
PSS, v. B101, no. 2, 1980, 563-573. (RZhF, 7/81, 7D1458)

b. Brillouin

203. Gyulamiryan, A.L., A.V. Mamayev, N.F. Pilipetskiy, and V.V. Shkunov (0). Wavefront reversal for weak signals that are frequency shifted during stimulated Brillouin scattering. OIS, v. 51, no. 2, 1981, 204-207.

204. Karpenko, S.G., F.N. Marchevskiy, and V.L. Strizhevskiy (51).  
Passive Q-switching of solid state lasers by stimulated Brillouin scattering. Sb 2, 12-17.

c. Miscellaneous Scattering

205. Mikhaylov, V.A., and V.I. Odintsov (2). Study on stimulated three-photon scattering of light from excitation near resonance transitions of a rubidium atom. VMU, no. 2, 1981, 76-97. (RZhF, 7/81, 7D1473)

4. Self-focusing

206. Babichenko, S.M., N.Ye. Bykovskiy, and Yu.V. Senatskiy (1). Self-focusing of a laser beam in a nonlinear medium with local perturbations. Fizicheskiy institut AN SSSR. Preprint, no. 14, 1981, 31 p. (RZhF, 8/81, 8D1372)

207. Bertsev, V.V., M.O. Bulanin, and I.A. Popov (0). Self-focusing and self-defocusing of IR radiation in molecular gases. OiS, v. 51, no. 2, 1981, 326-331.

208. Gorbunova, T.A., N.V. Kuz'mina, N.N. Rozanov, and V.A. Smirnov (0). Development of local perturbations in laser amplifying systems. KE, no. 7, 1981, 1468-1475.

209. Pakhalov, V.B., A.S. Tumasyan, and Yu.S. Chilingaryan (37). Self-focusing of light in a nematic phase MBBA crystal. IAN Fiz, no. 8, 1981, 1384-1388.

5. Acoustic Interaction

210. Belyayeva, T.V., P.I. Golubnichiy, P.I. Dyadyushkin, and Yu.I. Lysikov (0). Laser sonoluminescence in water at high hydrostatic pressures. ZhPMTF, no. 4, 1981, 28-33.

211. D'yakonov, A.M., Yu.V. Ilisavskiy, and E.Z. Yakhkind (4). Study on acoustooptic interaction of IR radiation with sound in tellurium. ZhTF, no. 7, 1981, 1494-1502.

212. Ganapol'skiy, Ye.M. (84). Hypersonic waves in the millimeter and submillimeter radio bands. Institut radiofiziki i elektroniki AN UkrSSR. Preprint, no. 159, 1980, 48 p.

213. Ganapol'skiy, Ye.M., A.P. Korolyuk, and V.V. Tarakanov (84). Hypersonic delay lines in single-crystal sound guides with caustics. Institut radiofiziki i elektroniki AN UkrSSR. Preprint, no. 166, 1981, 36 p.

214. Kessel', A.R., and V.M. Musin (38). Nonlinear effects in the interaction of light and sound. FTT, no. 8, 1981, 2290-2292.

215. Polyakov, Yu.A., Z.G. Makovskaya, S.A. Dembovskiy, I.A. Deryugin, and M.A. Talalayev (18). Criteria for selecting glassy chalcogenide materials for use in acoustooptic devices. NM, no. 7, 1981, 1166-1171.

216. Shandarov, V.M. (251). Wideband acoustooptic interaction with mode conversion in diffusion lithium niobate optical waveguides. ZhTF P, no. 14, 1981, 842-844.

## 6. General Theory

217. Afanas'yev, A.A. (3). Wavefront reversal in a four-wave interaction. Cited in KE, no. 7, 1981, 1614.

218. Akhmanov, S.A., M.S. Dzhidzhoyev, B.V. Zhdanov, N.I. Zheludev, A.I. Kovrigin, V.I. Kuznetsov, V.N. Markov, V.T. Platonenko, and A.I. Kholodnykh (2). Multiphoton molecular excitation in an intense IR field. The role of intermode intramolecular interactions. IAN Fiz, no. 8, 1981, 1544-1556.

219. Andreyev, A.A. (0). Form of a variation in the effective mass in heterostructures to obtain the maximum nonlinear optical effect. Deposit at VINITI, no. 1636-81, 13 April 1981, 6 p. (RZhF, 7/81, 7Yel226)

220. Apanasevich, P.A., A.A. Afanas'yev, and B.A. Samson (3). Angular dependence of wavefront reversal efficiency during four photon scattering in resonant media. IAN Fiz, no. 8, 1981, 1417-1421.

221. Balmush, N.I., and A.P. Muntyan (0). Nonlinear optical properties of a free polaron gas. Sb 15, 34-42. (RZhF, 8/81, 8Yel194)

222. Belyayev, M.V., L.S. Vasilenko, M.N. Skvortsov, and V.P. Chebotayev (159). Resonant coherent transition process in gas in a standing wave field. ZhETF, v. 81, no. 2, 1981, 526-539.

223. Berman, G.P., G.M. Zaslavskiy, and A.R. Kolovskiy (210). Quantum nonlinear resonant interactions. ZhETF, v. 81, no. 2, 1981, 506-516.

224. Brodin, M.S., and M.G. Matsko (5). Nonlinear exciton effects and the formation of a resonant Bose condensate with  $k = 0$ . IAN Fiz, no. 8, 1981, 1567-1579.

225. Drabovich, K.N., L.M. Kocharyan, and G.N. Slepchenko (2). Coherent resonant effects and optical frequency mixing. IAN Fiz, no. 8, 1981, 1532-1536.

226. Dzhugaryan, L.A. (3). Polarization characteristics of two-photon absorption of light by three-valent rare-earth ions in crystals. Part 1. Cubic and tetragonal syngony. Part 2. Rhombic, monocline, tricline, hexagonal and trigonal syngony. Institut fiziki AN BSSR. Preprint, no. 232, 1980, 56 p., no. 233, 1980, 54 p. (KL, 30/81, 27453-54)

227. Garibyan, O.V., B.V. Zhdanov, N.I. Zheludev, A.I. Kovrigin, and V.I. Kuznetsov (2). Thermal nonlinear optical rotation in cholesteric liquid crystals. Kristal, no. 4, 1981, 787-791.

228. Golik, L.L., V.N. Nemenushchiy, M.I. Yelinson, and Yu.I. Balkarey (15). Nonlinear reversing waves in a two-dimensional solid state "selfwave" medium. ZhTF P, no. 13, 1981, 813-817.

229. Imamov, E.Z., and V.D. Krevchik (0). Two-photon absorption of light by deep impurity centers in a compensated semiconductor. IAN Uz, no. 2, 1981, 48-51. (RZhF, 8/81, 8D1285)

230. Ivakin, Ye.V., S.G. Odulov, A.S. Rubanov, and M.S. Soskin (5,3). Wavefront reversal using a dynamic holographic method. IAN Fiz, no. 8, 1981, 1403-1411.

231. Kanashov, A.A., A.M. Rubenchik, and I.Ya. Rybak (75). Interaction of a coherent wave with a nonisothermal plasma. Institut avtomatiki i elektrometrii SOAN. Preprint, no. 143, 1981, 22 p. (RZhMekh, 8/81, 8B462)

232. Kaveyeva, Z.M., and V.V. Samartsev (214,38). Optical echo under double resonance conditions. IAN Fiz, no. 8, 1981, 1537-1543.

233. Kir'yanov, Yu.F., G.G. Kochemasov, S.M. Martynova, and V.D. Nikolayev (0). Four-wave mixing in resonant amplifying media during saturation of inversion. KE, no. 8, 1981, 1734-1741.

234. Kudryavtsev, V.G., M.I. Ryazanov, and S.N. Taraskin (0). Reciprocal effect of two-frequency light absorption in amorphous semiconductors. Sb 16, 141-144. (RZhF, 8/81, 8Ye1357)

235. Kukhtarev, N.V. (5). Wavefront reversal of optical beams in anisotropic media. KE, no. 7, 1981, 1451-1460.

236. Lisitsa, M.P., U. Nasyrov, G.S. Svechnikov, and I.V. Fekeshgazi (0). Effect of the type of polarization on the nonlinear absorption of light in crystalline and glassy arsenic sulfide. Sb 16, 145-146.

237. Lisitsa, M.P., U. Nasyrov, I.D. Turyanitsa, and I.V. Fekeshgazi (6,136). Phase transitions and nonlinear absorption of light in SbSI. Sb 2, 64-68.

238. Perina, J. (Czech). Photon statistics in nonlinear optical processes. Cited in KE, no. 7, 1981, 1608.

239. Ponath, H.E. (NS). Amplification of surface electromagnetic waves.  
ETP, no. 6, 1980, 509-513. (RZhF, 8/81, 8Zh14)

240. Ragul'skiy, V.V., and O.Yu. Nosach (17,1). Method of shaping a laser pulse. Otkr izobr, no. 29, 1981, 637028.

241. Shpak, M.T. (5). Work on quantum electronics and nonlinear optics at the Institute of Physics, Academy of Sciences of the Ukrainian SSR (1978-1980). IAN Fiz, no. 8, 1981, 1362-1375.

242. Stepanov, A.V., and A.V. Shelagin (1). Field amplification during total internal reflection from a granulated active medium. KSpF, no. 1, 1981, 10-16. (RZhF, 7/81, 7D1421)

243. Vasil'yev, V.S., and M.M. Pinayeva (3). Study on part of the  $\text{Y}_2\text{O}_3$ - $\text{Eu}_2\text{O}_3$ - $\text{Ta}_2\text{O}_5$  system. ZhNKh, no. 8, 1981, 200-2004.

244. Zaytseva, G.G. (38). Dynamics of photon echo phenomena in systems with a negative temperature. Deposit at VINITI, no. 1085-81, 10 March 1981, 14 p. (RZhF, 7/81, 7D1485)

245. Zel'dovich, B.Ya., N.V. Tabiryan, and Yu.S. Chilingaryan (37). Fredericks transition induced by optical fields. ZhETF, v. 81, no. 1, 1981, 72-83.

246. Zlokazov, V.B., L.Ya. Kobelev, and S.V. Karpachev (43). Temperature dependence of electron and ion components of electroconductivity in proustite. DAN SSSR, v. 259, no. 2, 1981, 344-347.

247. Zuykov, V.A., V.V. Samartsev, and Ye.A. Turiyanskiy (38).  
Excitation of optical (photon) echo signals by a series of traveling and standing waves. ZhETF, v. 81, no. 2, 1981, 653-664.

G. SPECTROSCOPY OF LASER MATERIALS

248. Ambrazyavichyus, G.A., G.A. Babonas, A.D. Bondarev, and Ye.I. Leonov (0). Spectroscopic study on the energy levels of Nd<sup>3+</sup> ions in Bi<sub>12</sub>SiO<sub>20</sub> single crystals. OiS, v. 51, no. 1, 1981, 184-186.

249. Babonas, G.A., A.D. Bondarev, Ye.I. Leonov, A.A. Reza, and D.B. Senulene (4). Spatial inhomogeneity of absorption in Bi<sub>12</sub>SiO<sub>20</sub> crystals. ZhTF, no. 8, 1981, 1701-1702.

250. Bugrim, Ye.D., S.N. Makrenko, N.S. Belokrinitkiy, and V.Ye. Nosenko (5,150). Photorecombination and thermal radiation from heated bromine. UFZh, no. 8, 1981, 1282-1286.

251. Dyakin, V.V., and N.S. Khilimova (6). Effect of excessive cadmium on the luminescence spectrum of cadmium sulfide. UFZh, no. 8, 1981, 1297-1300.

252. Gapontsev, V.P., A.A. Izyneyev, Yu.Ye. Sverchkov, and M.R. Syrtlanov (15). Mechanism and parameters for quenching of luminescence from rare earth ions by hydroxyl impurity groups in phosphate laser glass. KE, no. 8, 1981, 1824-1827.

253. Levshin, L.V., M.G. Reva, B.D. Ryzhikov, and S.I. Stal'makhovich (2). Effect of water impurities on molecular association of rhodamine 6G in ethanol solution. VMU, no. 4, 1981, 71-74.

254. Levshin, L.V., M.G. Reva, and B.D. Ryzhikov (2). Spectroscopic study on the structure of rhodamine 6G associates in ethanol solutions. VMU, no. 4, 1981, 75-77.

255. Mchedlov-Petrosyan, N.O. (34). States of rhodamine 6G in aqueous solutions of mineral acids. ZhFKh, no. 7, 1981, 1723-1727.

256. Studenov, V.I., I.V. Piterskaya, and N.G. Bakhshiyev (0). Effect of statistical intermolecular processes on the characteristics of stimulated emission from multicomponent solutions. OiS, v. 51, no. 1, 1981, 115-119.

H. ULTRASHORT PULSE GENERATION

257. Arutyunyan, A.G., K.B. Petrosyan, and K.M. Pokhsraryan (521). Efficient parametric generation of ultrashort light pulses in lithium iodate. IAN Arm, no. 16, 1981, 278-281.

258. Blagoveshchenskiy, V.V., G.Yu. Senyushkin, Yu.G. Zhukovskiy, and V.Ye. Kholmogorov (12). Picosecond neodymium laser based on commercial lasers. PTE, no. 3, 1981, 191-192.

259. Mikhaylov, V.P., N.M. Paltarak, M.I. Demchuk, A.F. Chernyavskiy, V.I. Avdeyeva, and M.A. Al'perovich (0). Study on the relationship of the energy of mode-locked laser radiation to the spectral luminescence characteristics of saturable absorbers. ZhPS, v. 35, no. 1, 1981, 38-46.

J. CRYSTAL GROWING

K. THEORETICAL ASPECTS OF ADVANCED LASERS

260. Andreyev, A.V. (2). Problems in coherent x-ray and gamma optics.  
Cited in KE, no. 7, 1981, 1609.

261. Andreyev, A.V., S.A. Akhmanov, and V.L. Kuznetsov (2). Feasibility of stimulated emission from channeled particles. IAN Fiz, no. 8, 1981, 1452-1458.

262. Borovskiy, A.V., and V.V. Korobkin (1). Gamma laser with Doppler line broadening. KE, no. 8, 1981, 1680-1685.

263. Bunkin, F.V., V.I. Derzhiyev, and S.I. Yakovlenko (1). Requirements for pumping an x-ray laser by an ionizing source. KE, no. 7, 1981, 1606-1607.

264. Bunkin, F.V., V.I. Derzhiyev, and S.I. Yakovlenko (1). Prospects for light amplification in the far UV. KE, no. 8, 1981, 1621-1649.

265. Bunkin, F.V., and V.D. Novikov (0). Developments in research on free electron lasers and radiation from channeled particles.  
AN SSSR. Vestnik, no. 8, 1981, 111-113.

266. Fedorov, M.V. (1). Free electron lasers. Fizicheskiy institut AN SSSR. Preprint, no. 36, 1981, 58 p. (RZhF, 8/81, 8D1135)

267. Fedorov, M.V. (1). Free electron lasers. Multiphoton transitions and saturation. IAN Fiz, no. 8, 1981, 1443-1451.

268. Ginzburg, V.L. (1). Which problems in physics and astrophysics are especially important or interesting today. UFN, v. 134, no. 3, 1981, 469-517.

269. Kondratenko, A.M., and Ye.L. Saldin (79). Generating coherent radiation by a relativistic e-beam in an undulator. ZhTF, no. 8, 1981, 1633-1642.

270. Nusinovich, G.S. (426). Possible cause of multimode oscillations in electron masers. IVUZ Radiofiz, no. 8, 1981, 1043-1044.

271. Zaretskiy, D.F., and E.A. Nersesov (0). Multiphoton processes in free electron lasers. ZhETF, v. 81, no. 2, 1981, 517-525.

L. GENERAL LASER THEORY

272. Belenov, E.M., S.I. Vedeneyev, and A.V. Uskov (1). Stimulated emission of e-m waves from loosely-coupled superconducting systems. KE, no. 7, 1981, 1491-1494.

273. Bukhenskiy, M.F., and A.S. Semenov (0). First International Seminar on Coherent Optics and Holography, Prague, 1-12 Sep 1980, and Second Czechoslovak Conference on Integrated Optics, Prague, 8-10 Sep 1980. KE, no. 7, 1981, 1608-1615.

274. Bykov, V.P., and G.V. Shepelev (18). Effect of interference states of active atoms on laser radiation. Deposit at VINITI, no. 2036-81, 7 May 1981. (RZhF, 8/81, 8D1144)

275. Chirkin, A.S. (2). Limit coherence and degree of polarization of laser radiation. Cited in KE, no. 7, 1981, 1608.

276. 9th Conference on Quantum Electronics and Nonlinear Optics EKON-80, Poznan, 23-26 April 1980. Opt app, no. 4, 1980, 505-506. (RZhF, 8/81, 8D1118)

277. Filippov, V.V. (3). Waveguide mechanism for amplification of light under conditions of total reflection. IAN B, no. 4, 1981, 129-131.

278. Gorshkov, V.G., A.I. Mikhaylov, A.N. Moskalev, and V.I. Fomichev (252). Strongly forbidden two-photon transitions in atoms. ZhETF, v. 81, no. 1, 1981, 115-127.

279. Il'in, Yu.B., and V.N. Konstantinov (19). Computer simulation of transition processes in a laser. Tr 2, 75-77. (RZhF, 7/81, 7D1260)

280. Kolodziejczak, J. (NS). Current status and developmental trends of physics in Poland. Part 1. General characteristics of the research potential in the physical sciences. Postepy fizyki, no. 6, 1980, 533-550. (RZhF, 7/81, 7A35)

281. Kopvillem, U.Kh. (0). Pseudospin machine for catastrophe and symmetry of elementary particle interaction. Sb 17, 97-113.

282. Oleynik, V.P., and D.I. Abakarov (6). Vacuum electrodynamics and dispersive media. Sb 2, 90-100.

283. Parkhomenko, M.V. (0). Quantum paramagnetic traveling wave amplifier with constant retardation of the wave according to the group velocity in the tuning band. IVUZ Radioelektr, no. 12, 1980, 87-90.  
(RZhRadiot, 7/81, 7Ye16)

284. Perina, J. (Czech). Properties of coherent optical fields.  
Cited in KE, no. 7, 1981, 1608.

285. Polyakov, G.I. (0). Equivalent electrical modeling method in the theory of intracavity modulation of lasers. RiE, no. 7, 1981, 1461-1468.

286. Shakhmuratov, R.N., and A.R. Kessel' (0). Modulation resonance in a laser. Sb 8, 150-155. (RZhF, 7/81, 7D1257)

287. Vinokurov, N.A. (79). Classical analog of the Einstein correlations between spontaneous emission, stimulated emission and absorption.  
Institut yadernoy fiziki SOAN. Preprint, no. 02, 1981, 11 p.  
(RZhF, 7/81, 7D313)

## II. LASER APPLICATIONS

### A. BIOLOGICAL EFFECTS

288. Barilyak, I.R., and I.V. Lopushan (637). Cytogenetic effects of helium-neon laser irradiation of rat bone marrow cells. Patologicheskaya fiziologiya i eksperimental'naya terapiya, no. 3, 1981, 50-53.

289. Durinyan, R. (644). Reflexotherapy - ten questions and answers. Tekhnika i nauka, no. 7, 1981, 9-11.

290. Ghilac, C.P., C.V. Axinte, and D.N. Olteanu (NS). Device for laser surgery. Patent Romania, no. 66781, 5 Sep 1980. (RZhRadiot, 7/81, 7Ye603)

291. Gurzadyan, G.G., D.N. Nikogosyan, P.G. Kryukov, V.S. Letokhov, T.S. Balmukhanov, A.A. Belogurov, and G.B. Zavil'gel'skiy (0). Inactivating effect of UV laser radiation on viruses and bacterial plasmids. Biofizika, no. 4, 1981, 659-663.

292. Komarova, A.A., V.E. Nagornyy, N.A. Akimova, L.P. Bogen, L.N. Zmeyeva, V.A. Kashuba, L.M. Kudayeva, L.I. Maksimova, T.V. Mogil'naya, Ye.M. Molodtsova, and B.I. Yazburskis (2,381). Study on certain hemodynamic and neurodynamic indices for persons working with lasers. "b 18, 5-16.

293. Komarova, A.A., V.P. Mozherenkov, G.K. Skatskaya, A.B. Chemnyy, N.N. Pivovarov, and P.I. Chikh (417,381,636). Effect of reflected laser radiation on the eye. Vestnik oftal'mologii, no. 1, 1978, 46-50.

294. Makarskaya, N.V., and V.P. Bykov (280). Laser coagulation of vessels in the vitreous humor before a vitrectomy. Vestnik oftal'mologii, no. 4, 1981, 21-23.

295. Osipov, G.I., and M.M. Pyatin (645). Eye damage from a laser beam. Vestnik oftal'mologii, no. 1, 1978, 50-51.

296. Pashchenko, V.Z., L.B. Rubin, and A.S. Semenov (0). Second All-Union Seminar on Application of Lasers in Biology, Tbilisi, 24-29 Nov 1980. KE, no. 8, 1981, 1852-1856.

297. Prokhorov, A.M. (0). Physics and medicine. AN SSSR. Vestnik, no. 7, 1981, 121-130.

298. Sherbitskaya, L.L., N.Ya. Dzyubko, A.N. Alferov, and O.T. Tarasyuk (637,643). Effect of laser therapy on immune reactions in precancer patients and patients at the preinvasion stage of cervical cancer. Vrachebnoye delo, no. 7, 1981, 8-11.

299. Shcherbitskaya, L.L., V.L. Isakov, and O.T. Tarasyuk (637). Lasers and their application in clinical practice. Vrachebnoye delo, no. 8, 1981, 11-15.

300. Shtel'makh, N.I., and S.M. Filippova (611). Use of laser acupuncture in clinical medicine. Vrachebnoye delo, no. 7, 1981, 4-8.

B. COMMUNICATIONS SYSTEMS

301. Aleksandrov, I.V., and O.Ye. Shushpanov (15). Thermoelastic stresses in multilayer cylindrical glass structures. ZhTF, no. 8, 1981, 1656-1667.
302. Aminev, A.M., Yu.I. Kovalev, and A.L. Timofeyev (629). Multichannel simultaneous pulse analyzer. PTE, no. 3, 1981, 87-89.
303. Andreyev, A.Ts., G.Yu. Borkina, M.M. Bubnov, V.V. Voytsekhovskiy, Ye.M. Dianov, V.M. Kotov, and T.A. Pryakhina (1). Effect of gamma irradiation on the temperature dependence of optical losses in a quartz glass-polymer fiber optic lightguide. KE, no. 8, 1981, 1816-1817.
304. Andrushko, L.M., and Ye.D. Shchepkina (571). Synthesis of plane inhomogeneous dielectric waveguides on a metallic screen operating in a single or several modes at a fixed frequency. Sb 2, 101-106.
305. Borisov, E.V., and A.K. Kiselev (0). Requirements for pointing accuracy in optical communications systems. Radiotekhnika, no. 3, 1981, 86-88. (RZhRadiot, 7/81, 7Ye493)
306. Fel'd, S.Ya., and A.V. Foygel' (0). Effect of absorption in cladding material on the transmission characteristics of two-layer optical fibers. RiE, no. 7, 1981, 1350-1354.
307. Gur'yanov, A.N., D.D. Gusovskiy, Ye.M. Dianov, M.M. Mirakyan, and V.B. Neustruyev (1). Simple method for determining the parameters of a single-mode fiber optic waveguide. KE, no. 8, 1981, 1802-1807.

308. Kalosha, V.P., and A.P. Khapalyuk (0). Waveguide modes in a fiber with a square core and homogeneous cladding. RiE, no. 7, 1981, 1355-1364.

309. Khomenko, V.Ye., A.A. Lipovskiy, and N.A. Aleksandrov (0). Refractometric method for measuring the parameters of planar lightguides. PTE, no. 3, 1981, 224-225.

310. Krupina, V.L., and V.I. Makkaveyev (0). Distribution function for the output signal from a photodetector in an optical information transmission system. IVUZ Radioelektr, no. 7, 1981, 21-28.

311. Kubicek, Z. (NS). Excitation of a graded optical fiber. Slaboproudny obzor, no. 3, 1981, 121-126. (RZhRadiot, 7/81, 7Ye285)

312. Lapides, A.A., and A.I. Shpuntov (231). Improving the quality of a TV image by optical filtering. TKiT, no. 7, 1981, 44-46.

313. Perednya, A.V., and Yu.M. Polishchuk (0). Phase statistical characteristics of strong fluctuations in optical signals in an atmospheric communications channel. Radiotekhnika, no. 4, 1981, 66-68. (RZhRadiot, 8/81, 8Ye355)

314. Petrovskiy, G.T., K.A. Agafonova, and A.V. Mishin (0). Planar optical waveguides produced from standard glasses by ion-exchange diffusion of  $Tl^+$  ions. ZhTF P, no. 15, 1981, 917-920.

315. Petruta, I.D. (NS). Method and apparatus for communications by semiconductor laser. Patent Romania, no. 71406, 15 June 1980. (RZhRadiot, 7/81, 7Ye495)

316. Petruta, I.D. (NS). Method and apparatus for television transmission by laser carrier. Patent Romania, no. 71407, 18 June 1980. (RZhRadiot, 7/81, 7Ye497)

317. Petruta, I.D. (NS). Method and apparatus for wideband communications by laser carrier. Patent Romania, no. 71408, 11 June 1980. (RZhRadiot, 7/81, 7Ye496)

318. Vlasov, V.A., Yu.V. Gulyayev, V.T. Potapov, V.P. Sosnin, D.P. Tregub, R.V. Shpilevskiy, and B.B. Elenkrig (15). Using a method of reflectometry to study conditions at the end of a lightguide. KE, no. 8, 1981, 1820-1823.

319. Vobian, J., and G. Herchenroeder (NS). Source of errors in measuring short pulses. Nachrichtentechnik-Elektronik, no. 1, 1981, 27-28. (RZhRadiot, 7/81, 7Ye396)

320. Zakharov, B.V., and Kh.V. Khinrikus (255). Reducing the error in atmospheric laser systems. KE, no. 8, 1981, 1708-1714.

321. Zolotov, Ye.M., and V.A. Chernykh (1). Determining the characteristics of diffusion waveguides by approximating functions. KE, no. 8, 1981, 1830-1833.

322. Zolotov, Ye.M., P.G. Kazanskiy, and V.A. Chernykh (0). Photoinduced polarization conversion in channeled  $Ti:LiNbO_3$  waveguides. ZhTF P, no. 15, 1981, 924-926.

C. BEAM PROPAGATION

1. In the Atmosphere

323. Abalakin, V.K., and Yu.L. Kokurin (0). Optical ranging of the moon.  
UFN, v. 134, no. 3, 1981, 526-535.

324. Alekseyev, A.V., and M.V. Kabanov (0). Determining the angles of refraction over extended paths. Sb 19, 25-33. (RZhGeofiz, 7/81, 7B195)

325. Antonov, A.S., and L.G. Yuskeselieva (NS). Rate of reduction of a free aerosol boundary in aerosols formed in a bounded space.  
DBAN, no. 1, 1981, 23-26. (RZhGeofiz, 8/81, 8B100)

326. Apel, P., and E. Huebner (NS). Atmospheric turbulence and its effect on laser radiation. Vermessungstechnik, no. 1, 1981, 22-24.  
(RZhGeofiz, 7/81, 7B121)

327. Armand, S.A. (0). Evaluating the efficiency for dispersing an aerosol medium during thermal blooming. RiE, no. 8, 1981, 1585-1593.

328. Astafurov, B.G., and G.N. Glazov (0). Negative binomial approximation of the photoelectron distribution in optical ranging and probing of the atmosphere. Deposit at VINITI, no. 1833-81, 22 April 1981, 16 p. (RZhGeofiz, 7/81, 7B118)

329. Astaf'yeva, L.G., A.P. Prishivalko, and I.R. Katseva (0). Attenuation and backscattering of radiation by systems of two- and three-layer particles in the atmosphere. IAN B, no. 2, 1981, 71-76. (RZhF, 8/81, 8D1099)

330. Balin, Yu.S., B.V. Kaul', N.V. Kozlov, and I.V. Samokhvalov (78). Optical polarization device for atmospheric probing. Otkr izobr, no. 33, 1981, 862096.

331. Barbonie, T., T. Necsoiu, and V. Tabarcea (NS). Integrated electronic device for counting and selection of signals received from an object at a determined azimuth. Patent Romania, no. 71339, 8 Aug 1980, (RZhRadiot, 8/81, 8Ye366)

332. Bogudlov, A.M., I.I. Dmitrotsa, V.V. Kobelev, V.V. Kopylov, L.V. Rykhlova, and L.S. Shtirberg (0). Modernizing the East German Zeiss satellite-ranging camera for laser ranging of satellites. Sb 20, 122-128.

333. Bufetov, I.A., A.M. Prokhorov, V.B. Fedorov, and V.K. Fomin (1). Initiation of slow combustion of an optical discharge in air by the initial optical breakdown plasma. ZhTF P, no. 15, 1981, 897-900.

334. Bukin, O.A., and V.A. Tyapkin (0). Measuring medium magnitudes of microturbulences over a sea surface. Sb 21, 7-9.

335. Buzdin, A.A., N.A. Korneyev, and S.B. Leble (0). Response of a layered medium to a lidar radiation pulse in an approximation of double scattering. Sb 21, 96-103.

336. Danichkin, S.A., and V.I. Marichev (78). Diagram for a lidar detector. Author's certificate USSR, no. 817653, 30 March 1981. (RZhGeofiz, 8/81, 8B56)

337. Didenko, N.K., and S.D. Pinchuk (0). Change in the temperature of a medium during vaporization of aqueous aerosols by a CO<sub>2</sub> laser. I-FZh, v. 41, no. 2, 1981, 341-342.

338. Demchuk, M.I., V.P. Kuznetsov, and K.P. Utochkin (334). Measuring complex for analyzing the propagation of optical signals in the atmosphere. Sb 5, 25-27.

339. Demchuk, M.I., V.N. Denisenko, and V.N. Khayminov (334). Information and measuring system for approximate analysis of the dynamics of excited molecular systems. Sb 5, 27-28.

340. Gavrikov, V.K., and V.G. Korenev (0). Recording of distortions in the time structure of an optical pulse propagating through an aerosol layer. FA10, no. 7, 1981, 763-765.

341. Gitlin, Ye.M., I.R. Korotkin, M.M. Loyko, V.S. Motkin, and A.P. Chaykovskiy (3,638). The Gloriya lidar for spectral studies in the atmosphere. Sb 5, 21-22.

342. Gochelashvili, K.S., I.V. Chashey, and V.I. Shishov (1). Instability of an optical beam in a moving turbulent atmosphere. KE, no. 7, 1981, 1551-1564.

343. Hamal, K., H. Jelinkova, V. Kubecek, M.I. Lukin, and S.A. Severnyy (0) (Russ transliteration of Czech names: K.Gamal, Ye. Yelinkova, V. Kubichek). Using an IFP-2000 flashlamp in an Interkosmos laser transmitter. Sb 20, 77-83.

344. Kamenogradskiy, N.Ye., and A.A. Shashkov (220). Experimental studies on atmospheric CO<sub>2</sub>. Tr 3, 73-90. (RZhGeofiz, 7/81, 7B151)

345. Kopylov, V.I., G.S. Kurbasova, and L.S. Shtirberg (0). Instrumental errors in first-generation sputnik laser rangefinders. Sb 20, 107-113.

346. Kopylov, V.I., and L.S. Shtirberg (0). Experience in using a laser in an Interkosmos rangefinder. Sb 20, 129-132.

347. Krikunova. E.M., and F.A. Markus (94). Fluctuation of radiation intensity and the "freeze" hypothesis. IVUZ Radiofiz, no. 8, 1981, 1038-1039.

348. Kudryavtsev, S.D. (0). Effect of atmospheric turbulence on the accuracy of recording the angle of the polarization plane while determining the difference of deviations of vertical lines. Sb 20, 147-151.

349. Kuznetsov, I.S., A.Ye. Bykhovskaya, and N.A. Kuznetsov (0). Device for determining the intensity of fog by backscattering of light. Author's certificate USSR, no. 792109, 30 Dec 1980. (RZhGeofiz, 7/81, 7B77)

350. Kurbasov, V.V., and G.S. Kurbasova (0). Determining the errors in a time-interval meter and photodetector for a laser rangefinder system. Sb 20, 95-101.

351. Matveyev, D.T. (0), and Makher Yakub Towadrows (Egyptian).  
Laser satellite-ranging observations at Helwan, Egypt, in 1979.  
Sb 20, 84-94.

352. Matveyev, D.T. (0). Analog system of range-gating for an Interkosmos laser rangefinder. Sb 20, 102-106.

353. Milyutin, Ye.R., and Yu.I. Yaremenko (0). Experimental study on the relationship between the meteorological range of visibility and the altitude of the cloud ceiling. Meteorologiya i gidrologiya, no. 3, 1981, 32-38. (RZhGeofiz, 7/81, 7B191)

354. Prishivalko, A.P. (3). Method for determining the microstructure of atmospheric haze. Otkr izobr, no. 33, 1981, 711835.

355. Prishivalko, A.P. (3). Method for determining the microstructure and refractive index for particles of atmospheric haze. Otkr izobr, no. 33, 1981, 754970.

356. Reshetskiy, V.I. (0). Two-quantum scattering of picosecond pulses in the absence of collisions. Sb 21, 135-137.

357. Sharapov, N.I. (0). Observations of satellites by a laser range-finder at Zvenigorod. Sb 20, 114-121.

358. Vdovin, V.A., and Yu.M. Sorokin (94). Numerical study on the dynamics of aerosol microflares in an optical field. ZhTF, no. 7, 1981, 1449-1457.

359. Zemlyanov, A.A., A.V. Kuzikovskiy, and L.K. Chistyakova (78).

Optical breakdown mechanism from the irradiation of aqueous targets by CO<sub>2</sub> laser pulses. ZhTF, no. 7, 1981, 1439-1444.

## 2. In Liquids

360. Chirkin, A.S., and F.M. Yusubov (2). Decreasing the correlation radius of random optical beams in absorbing media. ZhTF P, no. 13, 1981, 805-809.

361. Dreyden, G.V., Yu.I. Ostrovskiy, and M.I. Etinberg (4). Fine structure of a shock wave formed during the collapse of a laser cavity in liquid. ZhTF P, no. 13, 1981, 822-826.

362. Golubnichiy, P.I., V.M. Gromenko, V.G. Kudlenko, and A.D. Filonenko (0). Electromagnetic radiation accompanying the collapse of a steam-gas pocket, initiated by a high-power energy release in a liquid. Sb 22, 33-41. (RZhF, 7/81, 7D1494)

363. Golubnichiy, P.I., and V.G. Kudlenko (424). Study on the high-frequency component of acoustic radiation from microscopic bubbles of vapor generated during the boiling of underheated liquids. TVT, no. 4, 1981, 802-807.

364. Gorodetskiy, Ye.Ye., A.M. Yevtyushenkov, V.S. Yesipov, and Yu.F. Kiyachenko (20). Study on intense optical scattering by molecules in liquids. ZhETF, v. 81, no. 2, 1981, 588-599.

365. Levchenko, Ye.B., and A.L. Chernyakov (23). Instability of surface waves in an inhomogeneously heated liquid. ZhETF, v. 81, no. 1, 1981, 202-209.

### 3. Theory

366. Amosov, A.A., N.S. Bakhvalov, M.V. Vladimirov, D.V. Vlasov, Ya.M. Zhileykin, V.V. Korobkin, A.M. Prokhorov, and R.V. Serov (1). Propagation of high-power beams in a nonlinear medium. IAN Fiz, no. 8, 1981, 1422-1428.

367. Dubovets, V.G. (0). Interaction of three polarized waves in a resonant medium in the presence of a longitudinal magnetic field. ZhPS, v. 34, no. 4, 1981, 693-700. (RZhF, 8/81, 8D1369)

368. Kuznetsova, T.I., and D.Yu. Kuznetsov (1). Interaction of a complex spatially modulated wave with a plane wave in a quantum amplifier. KE, no. 8, 1981, 1808-1815.

369. Lipovskiy, I.M., V.L. Bakhraev, A.G. Finkel', and L.M. Sverdlov (0). The mechanism of interaction of IR laser radiation with molecular gases. Deposit at VINITI, no. 3114-81, 1981. (Cited in IVUZ Fiz, no. 8, 1981, 114)

370. Manishin, V.G., G.A. Pasmanik (426). Optimum correction of optical radiation propagating in a linear medium. IVUZ Radiofiz, no. 8, 1981, 986-991.

371. Polyanskiy, V.K., and A.G. Ushenko (0). Polarization structure of laser radiation reflected by a scattering layer with different states of the boundary surface at an external medium. ZhPS, v. 35, no. 1, 1981, 17-22.

372. Rakhvalov, V.V., and V.A. Stepanov (0). Fourth-order spatial correlation functions for a laser field. OiS, v. 51, no. 2, 1981, 332-336.

373. Sharlay, S.F., V.A. Serebryakov, N.A. Smurova, and N.P. Rynkevich (30). Propagation of short Gaussian pulses through a resonant amplifying medium. Part 3. Evaluating loss nonlinearity. IVUZ Priboro, no. 7, 1981, 94-96.

374. Vlasov, R.A. (3). Method for obtaining self-induced transparency in resonantly absorbing media. Author's certificate USSR, no. 792110, 30 Dec 1980. (RZhF, 8/81, 8D1383)

375. Zhukova, Ye.O., and Yu.F. Filippov (84). Theory on the reflection of a small-amplitude electromagnetic wave beam from a semiconductor plasma. Institut radiofiziki i elektroniki AN UkrSSR. Preprint, no. 167, 1981, 25 p.

D. COMPUTER TECHNOLOGY

376. Abakumov, B.M., V.I. Andreyev, N.D. Byakova, G.I. Rukman, and B.M. Stepanov (0). Principles in using magnetic thin films with a band domain structure for recording optical information. Sb 12, 15-24. (RZhRadiot, 8/81, 8Ye372)

377. Babenko, N.K., and A.D. Kolomiyets (0). Interference copying of microhologram matrices by hardware-controlled holograms. Sb 23, 46-53.

378. Batalinskiy, V.I., and V.Ya. Yurchishin (0). Current status and prospects for developing optical peripheral devices. PSU, no. 7, 1981, 1-3.

379. Berezin, D.G., G.V. Budrina, V.N. Grishanov, S.Ya. Dement'yev, B.V. Khramov, and L.S. Nikolayeva (458). Ferrite-spinel films as a medium for magnetooptic memory. Sb 24, 53-60.

380. Fedorov, B.F., and V.N. Korablin (7). Modeling of holographic recognition systems. OMP, no. 7, 1981, 57-58.

381. Gerasimova, S.A., and V.M. Zakharchenko (7). Holographic processor for associative information retrieval. OMP, no. 7, 1981, 23-26.

382. Klyukin, L.M., and A.N. Nesrullayev (141). Recording optical information on smectic-A by laser pulses. ZhTF, no. 7, 1981, 1529-1534.

383. Koshkin, L.I. (458). Physical properties of single-crystal ferrite-spinel films. Films as information carriers. Sb 24, 3-52.

384. Kovalenko, V.F., Ye.S. Kolezhuk, and P.S. Kuts (51). Photomagnetic recording of information. ZhTF P, no. 16, 1981, 1012-1016.

385. Petrov, M.P. (4). Optical information processing and holography. Fiziko-tehnicheskiy institut AN SSSR. Preprint, no. 696, 1981, 14 p. (RZhF, 8/81, 8D1048)

386. Petrov, M.P., A.V. Khomenko, M.V. Krasin'kova, V.I. Marakhonov, and M.G. Shlyagin (4). The "PRIZ" image converter and its use in optical information processing systems. ZhTF, no. 7, 1981, 1422-1431.

387. Todorov, T., L. Nikolova, and P. Sharlandzhiev (0). Photoinduced anisotropy in  $As_2S_3$  materials for polarization holographic storage and optical information processing. Sb 16, 225. (RZhF, 8/81, 8D972)

388. Vaytkus, Yu., E. Gaubas, and K. Yarashynas (49). Modulation of the refractive index in semiconductor crystals during excitation by edge absorption. IAN Fiz, no. 8, 1981, 1474-1484.

389. Zubkov, Yu.N., and A.N. Smolyar (458). Bismuth-containing garnet films as a medium for thermomagnetic recording. Sb 24, 72-81.

390. Zyubrik, A.I., A.A. Komlev, I.M. Syvorotka, and I.V. Fedorov (0). Temperature dependence of the parameters of high-coercivity yttrium orthoferrite plates. Mikroelektronika, no. 4, 1981, 358-360.

E. HOLOGRAPHY

391. Baykova, N.D., M.L. Gurari, Yu.K. Ibayev, and S.N. Marchenko (0). Signal/noise ratio in holograms in MnBi films. Sb 12, 42-44. (RZhRadiot, 8/81, 8Ye483)

392. Butusov, M.M., A.V. Knyaz'kov, A.E. Krumin', N.V. Kukhtarev, and A.S. Saykin (29). Amplifying optical beams with dynamic holograms in PLZT ferroceramics. ZhTF P, no. 15, 1981, 914-917.

393. Davydov, A.M. (0). Method for recording binary holograms enhancing the quality of reconstructed images. Sb 25, 175-180. (RZhF, 7/81, 7D1121)

394. Denisyuk, I.Yu., and Yu.D. Pimenov (0). Photochemical sensitivity of aluminum hydride. OiS, v. 51, no. 2, 1981, 293-300.

395. Denisyuk, Yu.N. (0). Imaging properties of intensity traveling waves and possible fields of their application. Opt app, no. 4, 1981, 465-469. (RZhF, 8/81, 8D1032)

396. Denisyuk, Yu.N. (7). Holography - what we know about it today. Priroda, no. 8, 1981, 10-19.

397. Denisyuk, Yu.N. (0). Static and dynamic volume holograms. ZhTF, no. 8, 1981, 1648-1655.

398. Devyatov, A.N. (0). Conditions for forming a holographic space by means of coherent radiation sources in the particular case of a quaternary system space. Sb 26, 76-93. (RZhRadiot, 8/81, 8Ye481)

399. Gaj, M., and A. Kijek (NS). Aberrations of third and fifth orders of holograms made on rotational surfaces of second degree. Opt app, no. 4, 1980, 341-349. (RZhF, 8/81, 8D1023)

400. Hoff, F. (NS). Properties of the parameters of the optimal linear characteristics of holographic recording. Slaboproudny obzor, no. 3, 1981, 105-108. (RZhRadiot, 8/81, 8Ye479)

401. Karnaughov, V.N., and N.S. Merzlyakov (0). Kinoform digital holographic film. Sb 27, 143-146.

402. Khvalovskiy, V.V., Yu.V. Fedorov, and O.N. Fedorova (30). Objective for reconstructing phase information. IVUZ Priboro, no. 7, 1981, 91-93.

403. Koshevoy, V.V., and S.A. Soroka (0). Acoustic tests as an analog of the holographic process. Sb 28, 363-369. (RZhF, 7/81, 7Zh768)

404. Litvinenko, A.S. (0). Device for reconstructing holograms. Otkr izobr, no. 27, 1981, 848998.

405. Merzlyakov, N.S. (0). Computer synthesis of color holograms. Sb 27, 146-151

406. Mulak, G. (NS). Higher order aberrations in holograms. Opt app, no. 4, 1980, 421-434. (RZhF, 8/81, 8D1022)

407. Nalimov, I.P., and V.I. Ushagina (0). The "Interkamera-81" international conference and exhibition, Prague, 24-26 March 1981. TKiT, no. 7, 1981, 51-52.

408. Pangelova, N., P. Sharlandzhiev, A. Katsev, and T. Todorov (NS). Light-sensitive arsenous sulfide suspension for holographic recording. Journal Signalaufzeichnungsmaterialien, no. 6, 1980,

409. Popova, N.R. (0). Digital model for hologram recording and reconstruction. Sb 27, 152-170.

410. Rulka, A. (NS). Aberration coefficients of Fourier holograms. Opt app, no. 4, 1980, 451-464. (RZhF, 8/81, 8D1021)

411. Scheurich, J., W. Hinz, R. Freyer, and W. Telle (NS). Application possibilities for thermoplastic information recording. Bild und ton, no. 2, 1981, 37-42,64. (RZhRadiot, 7/81, 7Ye629)

412. Zaletayev, S.P. (0). Kinetics of optical recording in polycrystal layers of tetracene. IAN Lat, no. 6, 1980, 80-84. (RZhF, 7/81, 7D1122)

F. LASER-INDUCED CHEMICAL REACTIONS

413. Adamova, Yu.A., N.N. Akinfiyev, B.S. Boytsov, V.I. Zubkov, A.V. Pankratov, and A.N. Skachkov (0). IR-initiated reactions in  $BCl_3-SiH_4$  and  $BCl_3-CH_4$  systems. KhVE, no. 4, 1981, 365-369.

414. Akramova, D.Sh., D.T. Alimov, N.B. Delone, B.A. Zon, V.K. Medvedeva, M.A. Preobrazhenskiy, M.A. Tursunov, and P.K. Khabibullayev (85). Polarization phenomena from three photon ionization of a potassium atom. IAN Fiz, no. 8, 1981, 1459-1463.

415. Baronov, G.S., A.D. Britov, S.M. Karavayev, A.I. Karchevskiy, S.Yu. Kulikov, A.V. Merzlyakov, S.D. Sivachenko, and Yu.I. Shcherbina (0). High-resolution IR laser spectroscopy of supercooled hexafluorides of heavy elements. KE, no. 7, 1981, 1573-1576.

416. Beterov, I.M., and N.V. Fateyev (159). Laser-induced chemisorption of  $SF_6$  molecules on a hot surface. KE, no. 7, 1981, 1515-1520.

417. Dembovetskiy, V.V., Ye.N. Bondarchuk, and G.I. Surdutovich (10). Separation of gas mixtures and drift motion of molecules in an infrared resonance radiation field. Institut fiziki poluprovodnikov SOAN. Preprint, no. 55, 1981, 15 p. (RZhF, 7/81, 7I60)

418. Gorban', I.S., and A.S. Skrda (0). Absorption spectra of impurity nitrogen in  $\alpha$ -SiC of various polytypes. UFZh, no. 2, 1981, 228-232. (RZhF, 7/81, 7D638)

419. Grushevskiy, V.B., Ya.P. Klyavin'sh, and M.L. Yanson (109). Determining the relative efficiency of energy transfer from discrete  $Na_2(B^1\Pi_u)$  vibrational-rotational levels at the potassium atom level. Sb 7, 21-30.

420. Kupriyanov, S.Ye., A.A. Perov, A.Yu. Zayats, and A.N. Stepanov (122). Exciting molecules to long-lived Rydberg states during collisions with electrons. ZhTF P, no. 14, 1981, 861-864.

421. Letokhov, V.S., V.G. Movshev, and S.V. Chekalin (72). Optical ejection of ions from rhodamine 6G molecules adsorbed by a surface under the effect of a UV laser pulse. ZhETF, f. 81, no. 2, 1981, 480-485.

422. Maksakov, A.A., and N.A. Roy (0). Detonation temperature of oxyhydrogen gas at high initial pressure. FGIV, no. 4, 1981, 155-157.

423. Naboykin, Yu.V., L.A. Ogurtsova, O.N. Pyshkin, and V.A. Tsekhomskiy (0). Study on silver halide photochromic glass using pulsed photolysis. FiKhS, no. 4, 1981, 451-456.

424. Nagorskiy, G.A. (0). Using laser fields for separation-by-mass of secondary particles with energies approximating 10 TeV. Sb 29, 178-181. (RZhRadiot, 7/81, 7Ye580)

425. Papernov, S.M., and Zh.L. Shveghda (109). Processes of energy transfer in sodium vapor during resonance excitation of the  $3^2P$  level. Sb 7, 31-41.

426. Popescu, I.I., I. Popescu, A. Preda, and C. Topliceanu (NS). Hollow-cathode laser device [for isotope enrichment]. Patent Romania, no. 72472, 6 Oct 1980. (RZhRadiot, 8/81, 8Ye439)

427. Pyatosin, V.Ye., M.P. Tsvirko, K.N. Solov'yev, and T.F. Kachura (0). Laser photolysis of ethioporphyrin I - rare earth complexes. ZhPS, v. 35, no. 2, 1981, 268-271.

428. Rupkus, Ya.E. (109). Population and deactivation kinetics of metastable states of  $Pb^3P_{1,2}$  during pulsed photolysis of  $PbBr_2$  molecules. Sb 7, 84-98.

429. Volkov, S.V., A.F. Gurko, and V.I. Lutoshkin (512). Study on the laser-induced chemical reaction of  $BCl_3$  with methane. TiKh, no. 4, 1981, 564-567.

430. Vostrikov, A.A., S.G. Mironov, and B.Ye. Semyachkin (0). Molecular beam study on nonequilibrium processes. Sb 30, 86-105.

431. Yanson, M.L. (109). Study on the processes for the excitation of atoms and molecules during the adsorption of laser radiation by alkali metal vapors. Sb 7, 3-20.

G. MEASUREMENT OF LASER PARAMETERS

432. Alentsev, B.M., A.F. Kotyuk, L.A. Kosovskiy, and N.Sh. Khaykin (0). Acoustooptic power stabilizer for c-w laser radiation. IT, no. 8, 1981, 34.

433. Arakelyan, S.A., R.N. Gyuzalyan, and S.B. Sogomonyan (59). Using various nonlinear crystals to measure the duration of ultrashort pulses. KE, no. 7, 1981, 1576-1579.

434. Axinte, C.V., I. Farcas, I. Gutu, R. Utale, T. Marin, V. Dragănescu, and R. Alexandrescu (Romanians). Instrument for measuring c-w laser power. Author's certificate USSR, no. 68753, 25 Sep 1980. (RZhF, 7/81, 7D1387)

435. Bakhir, L.V., G.I. Levashenko, I.V. Mazayev, A.Ye. Burdevitskiy, and T.I. Romanchuk (3,638). The Svirel' infrared spectrophotometer. Sb 5, 10-11.

436. Bardyukov, A.M., M.E. Berg, L.S. Kremenchugskiy, V.I. Kukhtevich, and A.G. Chepilko (5). Device for determining the space-time characteristics of coherent optical radiation. Otkr izobr, no. 33, 1981, 861970.

437. Borzunov, N.G., L.N. Popov, and B.N. Poyzner (0). Laser radiation power meter using the active element of the laser. Deposit at VINITI, no. 2127-81, 11 May 1981, 6 p. (RZhF, 8/81, 8D1244)

438. Gase, R. (NS). Study on a filter-glass calorimeter for measuring the radiant energy of picosecond pulsed laser radiation. ETP, no. 6, 1980, 541-547. (RZhF, 8/81, 8D1242)

439. Grigoryan, M.M., A.S. Nikogosyan, and P.S. Pogosyan (0). Rayleigh scattering of short light pulses by inclusions in transparent media. DAN Arm, no. 4, 1980, 229-232. (RZhF, 8/81, 8D1098)

440. Kondrat'yev, Ye.L., V.D. Pis'mennyy, A.T. Rakhimov, V.B. Sayenko, and A.A. Yastrebov (98). Information, measuring and control system for a periodic pulsed CO<sub>2</sub> laser. Deposit at VINITI, no. 1945-81, 29 April 1981, 57 p. (RZhF, 8/81, 8D1241)

441. Kotyuk, A.F., A.P. Romashkov, and N.Sh. Khaykin (0). Production of a metrologic control system for measuring pulse power. IT, no. 8, 1981, 30-31.

442. Kukhta, A.V., and A.T. Polukhin (15). Method for determining the gain in a population inversion medium. Author's certificate USSR, no. 731505, 30 May 1980. (RZhRadiot, 7/81, 7Ye481)

443. Privalov, V.Ye., and V.P. Kapralov (0). Device for measuring laser wavelength. Otkr izobr, no. 33, 1981, 757090.

444. Rubinshteyn, V.M. (0). Effect of laser radiation shift on errors in transmitting a unit of relative distribution of power density. IT, no. 8, 1981, 35-37.

445. Slesareva, L.V. (0). Measuring device for selecting a pair of thermoelectric elements in calorimetric laser radiation wattmeters. IT, no. 7, 1981, 70-71.

446. Utenkov, B.I., A.A. Kononov, and N.N. Forsh (0). Spatial and angular structure of a restricted optical beam in an aqueous medium. ZhPS, v. 35, no. 1, 1981, 176-178.

447. Vinokur, M.A. (0). Optical measuring oscillator with normalized space-time and energy characteristics. IT, no. 8, 1981, 31-33.

448. Zinchenko, N.I., and A.A. Liberman (0). Determining the absorption coefficient for conical calorimeter cells. IT, no. 8, 1981, 37-38.

H. LASER MEASUREMENT APPLICATIONS

1. Direct Measurement by Laser

449. Abramova, R.S., T.M. Andreyevskaya, V.V. Vasin, V.A. D'yakov, Z.G. Pavlova, and M.A. Tronina (0). Analytical and experimental studies on a holographic inversion filter. Sb 31, 107-118.

450. Adzhalov, V.I., V.A. Makeyev, and I.R. Utyamyshev (0). Holographic methods for a posteriori image processing of biomedical objects. Sb 31, 67-81.

451. Alum, Kh.P., Yu.V. Koval'chuk, and G.V. Ostrovskaya (4). Holographic interferometry of a plasma during frequency conversion of radiation propagating through it. ZhTF, no. 8, 1981, 1618-1623.

452. Ankilov, A.N., A.R. Dorokhov, V.I. Koren'kov, A.S. Kormin, K.P. Kutsenogiy, S.A. Shutov, and A.I. Yavorskiy (0). Experimental study on the precipitation of an aerosol in a centrifugal gas cleaner. Sb 30, 106-112.

453. Antonov, V.A., Yu.A. Bykovskiy, A.I. Larkin, A.A. Markilov, P.G. Pleshanov, and S.N. Starikov (0). Holographic medical diagnostics of multiparametric states. Sb 31, 81-94.

454. Antonets, V.A. (0). Optical spectral analysis in studies on the mechanical activity and energy expenditure of the heart muscle. Sb 3, 100-107.

455. Apostol, D., P. Bachmann, C. Blanaru, St. Cazacu, V. Damian, A. Ionescu, and V. Vasiliu (NS). Laser interferometer for measuring rectilinearity. SCF, no. 2, 1981, 203-206. (RZhF, 8/81, 8D873)

456. Apostol, D., P. Bachmann, A.I. Ciura, A. Nitouiu, M. Risticci, and V. Vasiliu (NS). Using an He-Ne laser for leveling. SCF, no. 2, 1981, 207-215. (RZhF, 8/81, 8D990)

457. Artyushenko, V.G., and Ye.M. Dianov (1). Temperature dependence of absorption coefficients in KCl crystals at 10.6  $\mu\text{m}$ . KSpF, no. 8, 1981, 66-73.

458. Auslender, A.L., V.M. Ginzburg, G.M. Ginzburg, and B.M. Stepanov (0). Using a holographic correlator for operative analysis of electrocardiograms. Sb 31, 94-100.

459. Barbonie, T., and T. Necsoiu (NS). Circuit for controlling distance measurement by a laser telemeter. Patent Romania, no. 71670, 30 Sep 1980. (RZhRadiot, 7/81, 7Ye503)

460. Bazarov, Ye.N., V.G. Izrayelyan, Ye.I. Sverchkov, G.I. Telegin, and Yu.K. Chamorovskiy (15). A decoupled effect in a fiber optic ring interferometer. KE, no. 8, 1981, 1827-1829.

461. Berezin, A.B., V.A. Burtsev, A.G. Smirnov, and V.G. Smirnov (247). Holographic detection of coherence losses of laser radiation probing the plasma of a fast linear theta pinch. NII elektrofizicheskoy apparatury. Leningrad. Preprint, no. P-K-0502, 1981, 20 p. (RZhF, 8/81, 8G613)

462. Bertsev, V.V., Yu.G. Kozlov, and A.I. Lopatin (0). Multibeam selective interferometers based on diffraction gratings. OiS, v. 51, no. 1, 1981, 184-186.

463. Bogomolov, A.S. (0). Using reflection holograms to study diffuse surface relief. OiS, v. 51, no. 2, 1981, 337-341.

464. Bolsun, A.I., and A.P. Petrushenko (0). Lecture demonstrations using a gas laser. Sb 32, 16-19. (RZhF, 7/81, 7A128)

465. Bondaruk, V.N., V.A. Kononov, and S.A. Mikhnov (3). Projection system using an extended screen for laser marking. ZhPS, v. 35, no. 2, 1981, 367-369.

466. Borisov, V.I., and A.I. Voytenkov (3). Determining the parameters of single-mode waveguides by change in the refractive index of a boundary medium. ZhTF, no. 8, 1981, 1668-1670.

467. Bruk, Yu.M., and L.G. Sodin (84). Reconstruction of images scattered in an inhomogeneous medium. Institut radiofiziki i elektroniki AN UkrSSR. Preprint, no. 170, 1981, 48 p.

468. Bulyarskiy, S.V., N.S. Grushko, T.I. Goglidze, L.M. Panasyuk, and G.N. Ryabukhina (635). Effect of inhomogeneity in a semiconductor material on photographic image contrast. FTP, no. 8, 1981, 1656-1657.

469. Burdin, I.Yu., A.V. Zhirnov, V.P. Kulesh, A.A. Orlov, V.A. Pesetskiy, and S.D. Fonov (133). Using laser methods to study detached flows in a wind tunnel and in flight. Sb 33, 1-8.

470. Burykin, S.Ye., G.M. Zverev, L.A. Skvortsov, and V.P. Fomichev (0). Method for measuring optical absorption in coatings. Otkr izobr, no. 29, 1981, 730084.

471. Chayka, M.P., Ye.N. Kotlikov, G.Ts. Todorov, and M.R. Atadzhanov (0). False reference signals in magnetic fields. OiS, v. 51, no. 1, 1981, 63-70.

472. Danilov, N.S., V.I. Titkov, and Ya.Ya. Tomsons (159). Tracking device for measuring Doppler signals. Author's certificate USSR, no. 692379, 10 Jan 1981. (RZhRadiot, 8/81, 8Ye383)

473. Dolgikh, G.I. (0). Possibility of recording the basic characteristics of a wave process by a laser strain gauge. Sb 17, 30-34.

474. Dubovoy, A.P., and V.M. Sinel'nikov (0). Theory of an experiment on ranging ionospheric inhomogeneities in temperate latitudes by satellite radichography. Sb 34, 179-183. (RZhF, 8/81, 8Zh124)

475. Geller, V.M., G.I. Grif, and V.N. Garevskiy (0). Study on the possibilities of developing ceramic monoblocks for gas laser instruments. Sb 35, 32-36. (RZhRadiot, 8/81, 8Ye315)

476. Ginzburg, V.M., Yu.A. Itkin, Ye.N. Lekhtsiyer, Yu.P. Presnyakov, N.S. Pushkar', E.G. Semenov, and B.M. Stepanov (0). Using holographic methods for studies in cryobiology. Sb 31, 35-44.

477. Goloviznin, V.P. (4). Propagation of shock waves in expanding channels. ZhTF, no. 8, 1981, 1735-1737.

478. Golubev, A.N. (120). Interference method for measuring distances. Otkr izobr, no. 29, 1981, 700027.

479. Gonchukov, S.A., R.D. Kasumova, and Ye.D. Protsenko (16). Laser accelerometer. Otkr izobr, no. 33, 1981, 778493.

480. Gorelov, A.V., S.N. Natarovskiy, and A.A. Tsukanov (30). Resolution of optical systems under coherent illumination. Part 2. IVUZ Priboro, no. 8, 1981, 85-88.

481. Ivanov, A.A., G.M. Maksimov, and Yu.S. Nechayev (560). Metrological features of a laser device with a single-mirror deflecting unit. Institut fiziki vysokoy energiy. Serpukhov. Preprint, no. 10, 1981, 15 p. (RZhF, 8/81, 8D1418)

482. Ivanov, V.P., V.A. Blokhin, V.V. Babenko, and L.F. Kozlov (405). Laser Doppler velocimeter with an electronic signal recording system. PTE, no. 3, 1981, 192-195.

483. Kakichashvili, Sh.D., A.M. Labartkava, and B.P. Dzhugeli (0). Holographic experiment in medicine. Sb 31, 7-12.

484. Karlov, N.V., and B.S. Luk'yanchuk (1). Laser monitoring of gas diffusion through a porous membrane. KE, no. 7, 1981, 1509-1514.

485. Karpov, V.Ye., A.K. Polonin, A.S. Nemchenok, and V.A. Sinyayev (430). Interference device for measuring translation. Otkr izobr, no. 33, 1981, 861934.

486. Kashcheva, G.A., V.S. Sobolev (0). Spectral analysis of the signal from a laser Doppler velocimeter for flows with velocity gradients. RIE, no. 7, 1981, 1564-1573.

487. Kaufman, S.A., and A.P. Knyupfer (0). Error analysis of a working etalon for a measuring unit of laser radiation energy. IT, no. 8, 1981, 39-40.

488. Khodan, I.V., V.A. Pylev, and V. Liliyenblyum (0). Laser Doppler velocimeter study on the velocity field of a gas-liquid flow in an inclined column. Sb 36, 32-34. (RZhMekh, 8/81, 8B763)

489. Khodinskiy, A.N., L.S. Korochkin, and S.A. Mikhnov (3). Defectoscope.  
Otkr izobr, no. 29, 1981, 853524.

490. Kolesov, V.L., I.Ye. Nakhutin, P.P. Poluektov, and Yu.G. Rubezhnyy (0). Method for measuring the resonance of excited vibrations in a specimen. Otkr izobr, no. 33, 1981, 861969.

491. Kolobashkin, V.M., and A.I. Popov (16). New possibilities for laser absorption analysis. Priroda, no. 7, 1981, 50-57.

492. Komissaruk, V.A., and N.P. Mende (4). Using interferometry to study planar discontinuous flows. ZhTF, no. 8, 1981, 1742-1746.

493. Kopvillem, U.Kh., A.I. Bondarenko, G.I. Dolgikh, A.I. Kondrat'yev, Yu.M. Krinitsyn, V.A. Lugovoy, A.N. Pavlov, S.V. Prants, I.V. Sushilov, and D.A. Taratenko (0). Recording the natural vibrations of the earth by a laser strain gauge. Sb 17, 18-29.

494. Koryakovskiy, A.S., and V.M. Marchenko (1). Wavefront detector based on the Talbot effect. ZhTF, no. 7, 1981, 1432-1438.

495. Koscielewski, R., and S. Pachuta (NS). Laser attachment to a geodetic instrument. Patent Poland, no. 107370, 30 July 1980.  
(RZhRadiot, 8/81, 8Ye447)

496. Kostin, N.A., L.I. Sharakhovskiy, and G.M. Yatskevich (180). Using a laser anemometer to study the aerodynamics of an eddy chamber in a plasmatron. IAN B, no. 3, 1981, 88-93.

497. Kostko, M.Ya. (3). Reference plane using a semiconductor emitter for automatic control of moving objects. ZhPS, v. 35, no. 2, 1981, 370-374.

498. Kozlov, V.V., Yu.K. Zavodov, and L.A. Sashina (0). Monitoring the relief and leveling of large area surfaces. IT, no. 7, 1981, 27-29.

499. Lekhtsiyer, Ye.N., A.N. Nesrullayev, A.S. Sonin, and B.M. Stepanov (4). Study on the temperature dependence of the refractive index in the region of smectic A - nematic phase transition, using holographic microscopy. FTT, no. 7, 1981, 2028-2032.

500. Lobanov, B.D., N.T. Maksimova, and L.I. Shchepina (0). Optical conversion of F- and F-aggregate color centers in LiF crystals. ZhPS, v. 35, no. 2, 1981, 335-337.

501. Lukin, A.V., R.A. Rafikov, and I.A. Toporkova (7). Evaluating tolerances and optimizing holographic systems for monitoring aspherical surfaces. OMP, no. 7, 1981, 33-35.

502. Magdich, L.N., and P.I. Shnitser (0). Study on the structure of oscillations in an open acoustic resonator with a mirror piezo-converter. Akusticheskiy zhurnal, no. 4, 1981, 562-566.

503. Maksimova, E.V., N.K. Rudnevskiy, A.N. Tumanova, and N.P. Grishina (0). Device for testing solid materials. Otkr izobr, no. 27, 1981. 639319.

504. Mansfel'd, A.D., A.G. Sanin, Yu.L. Simonov, and I.I. Shmelev (0). Optical spectral analysis of signals from coherent pulsed ultrasonic ranging of the heart. Sb 31, 59-66.

505. Marti, L., A. Patin'o, and Yu.I. Ostrovskiy (0). Determining the sign of a point displacement in a deformed surface using speckle interferometry. ZhTF P, no. 16, 1981, 970-973.

506. Maslov, V.V., M.P. Novikov, and A.A. Ketkovich (0). Device for monitoring the defects in polarized surfaces of optical components by the angle of total internal reflection. Author's certificate USSR, no. 777410, 4 Dec 1980. (RZhRadiot, 7/81, 7Ye527)

507. Maslov, V.V. (0). Resolution of interference monitoring of thin transparent plates for flatness. IT, no. 7, 1981, 35-37.

508. Medyantseva, L.L., V.V. Leonov, and V.V. Gorbacheva (0). Quality control device for measuring deviation from rectilinearity and planeness. IT, no. 7, 1981, 25-26.

509. Osipov, M.N. (0). Speckle interferometry and holographic photoelasticity studies on the stress state of an object. Deposit at VINITI, no. 2599-81, 29 May 1981, 113-118. (RZhMekh, 8/81, 8V1526)

510. Ovilko, O.G., and L.Ye. Chirkov (231). Interference noise in the final image during element-by-element printing by a laser light source. Tr 4, 115-118. (RZhF, 7/81, 7D1147)

511. Paguta, M.T. (0). Automatic temperature stabilization in an inhomogeneous thermonuclear plasma. Sb 37, 25-37.

512. Panchenko, V.Ya., I.M. Sizova, and A.P. Sukhorukov (0). Dynamics of establishing the gas temperature of vibrationally excited ozone. ZhPMTF, no. 4, 1981, 17-27.

513. Panov, S.V., A.A. Pikarevskiy, and O.I. Stoyanovskiy (0). Mini laser Doppler velocimeter for liquid flow diagnostics. Sb 38, 96-99.

514. Pavlov, A.N. (0). Possibility of using a laser strain gauge to measure the phase velocity of microseism propagation. Sb 17, 14-17.

515. Plotnichenko, V.G., V.K. Sysoyev, and I.G. Firsov (1). Study on optical homogeneity of highly transparent solid materials by laser calorimetry. KE, no. 7, 1981, 1495-1503.

516. Polonin, A.K., V.Ye. Karpov, V.A. Sinyayev, and A.S. Nemchenok (430). Device for measuring deformation. Otkr izobr, no. 33, 1981, 861933.

517. Popela, D.B. (NS). Measuring rectilinearity by a difference laser interferometer. Feingeraetetechnik, no. 2, 1981, 63-64.  
(RZhRadiot, 7/81, 7Ye490)

518. Prok, A. (NS). Device for trimming the elements of an airplane's fuselage or a ship's hull by a laser beam. Author's certificate Czechoslovakia, no. 184137, 15 July 1980. (RZhRadiot, 7/81, 7Ye525)

519. Rozenshteyn, A.Z. (307). Method for studying particle concentration fields in dispersed flows. I-FZh, v. 41, no. 1, 1981, 55-60.

520. Shchukin, I.V., A.O. Bakrunov, and V.I. Shlychkov (0). Image processing of biomedical objects, based on the use of hybrid optoelectronic devices. Sb 31, 118-126.

521. Skrotskiy, G.V. (118). Holographic intrescopy. Cited in KE, no. 7, 1981, 1612.

522. Smirnov, V.V., and G.B. Semenov (0). Holographic wave correction and prospects for developing a high-resolution endoscope. Sb 31, 12-34.

523. Sotin, V.Ye., A.N. Osovitskiy, L.S. Tsesnek, and A.F. Chelyayev (7). Using waveguide optical scattering to determine the statistical characteristics of irregular surfaces. OMP, no. 7, 1981, 1-4.

524. Starostenko, B.V. (0). Method for measuring the width and depth of cracks in objects. Otkr izobr, no. 33, 1981, 861936.

525. Sukhorukova, A.K., A.P. Sukhorukov, L.S. Telegin, and I.B. Yankina (2,538). Nonlinear optical "photography" of picosecond pulses. IAN Fiz, no. 8, 1981, 1562-1566.

526. Suychiev, V.A., V.P. Fedoseyev, and M.B. Shtark (0). Optical methods for studying neuron structures. Avtometriya, no. 4, 1981, 4-21.

527. Sypko, V.P. (612). Stroboholographic study on the vibrations of a square plate. Tr 5, 79-84. (RZhMekh, 8/81, 8V217)

528. Taranenko, V.G., Yu.G. Gorokhov, N.S. Romanyuk, and S.I. Shirokov (0). Interferometer. Otkr izobr, no. 33, 1981, 861931.

529. Ushakov, A.N. (0). Automatic processing of interferograms by computer. Sb 27, 99-124.

530. Uryvskiy, Yu.I., K.A. Lavrent'yev, A.A. Churikov, and A.N. Sedov (0). Method for determining the variation in thickness of a film transparent in the visible range, deposited on a reflective substrate. Otkr izobr, no. 32, 1981, 859806.

531. Utyamyshev, R.I. (0). Prospects for using holography in biomedical research. Sb 31, 4-6.

532. Varshavskiy, Yu.I., R.S. Dadashev, and F.I. Braginskaya (0). Using ultrasonic holography in medical diagnostics. Sb 31, 44-59.

533. Vasilenko, L.S., N.M. Dyuba, A.K. Petrov, and N.N. Rubtsova (0). Study on vibrational deactivation in  $C_6F_5H$ ,  $C_6F_6$  and  $C_6F_5Cl$  vapors. OIS, v. 51, no. 1, 1981, 120-123.

534. Vasil'yeva, I.A., V.A. Yepishin, N.G. Pokormyakho, V.A. Svirch, L.S. Tolchinskiy, A.N. Topkov, A.S. Urinson, and D.N. Yundev (74,34). Measuring the concentration and efficiency of electron collision frequency in prototype production devices with MHD generators using a submillimeter laser interferometer. TVT, no. 4, 1981, 832-838.

535. Vereshchagin, I.P., A.Ye. Gonik, and G.A. Shauro (0). Optical Doppler velocimeter determination of low velocities in a turbulent flow. Deposit at TsINTIkhimneftemash, no. 745, 12 March 1981, 9 p. (RZhMekh, 7/81, 7B1223)

536. Volkov, V.I. (0). Laser Doppler velocimeter study on the hydrodynamics in a porous medium. Sb 8, 5-9. (RZhMekh, 7/81, 7B1093)

537. Vyatkin, V.M., S.Ya. Makarov, Yu.V. Osipov, A.I. Plavskiy, and A.U. Umbetov (110). Research and development of devices for shaping optical pulses. Deposit at VINITI, no. 1869-81, 24 April 1981, 78 p. (RZhF, 7/81, 7D1002)

538. Wernicke, G. (NS). Processing of holographic interferograms in experimental studies on stress and deformation. RAWZMuM, no. 7, 1980, 87-97. (RZhMekh, 8/81, 8V1525)

539. Yegorov, I.M., V.L. Kazak, and I.L. Ryazantseva (30). Determining the tooth pliability of involute straight-toothed cylindrical gear wheels in gearing, using a holographic interferometric method. IVUZ Priboro, no. 7, 1981, 86-90.

540. Zabelin, V.A., Ye.R. Malamed, Yu.S. Skvortsov, and V.A. Soytu (0). Interferometer for measuring translational motion on a two-coordinate table. Otkr izobr, no. 33, 1981, 861932.

541. Zagorodnyuk, V.T., D.Ya. Parshin, and A.G. Bulgakov (0). Laser instruments: experience and prospects in application. Sb 39, 14-15. (RZhRadiot, 8/81, 8Ye391)

542. Zastrogan, Yu.F., and V.R. Belevitnev (0). Measuring high mechanical vibration rates by two-frequency interferometers. Metrologiya, no. 8, 1981, 36-42.

543. Zemskov, G.G., V.P. Karlash, I.A. Semko, V.A. Kharchenko, and S.V. Tsukanov (0). Laser devices for measuring linear dimensions. Zarubezhnaya radioelektronika, no. 4, 1981, 48-53. (RZhRadiot, 7/81, 7Ye520)

544. Zharov, V.P., and S.G. Montanari (0). Measuring vibrational-translational relaxation times in gases by resonant laser spectrometers. OiS, v. 51, no. 1, 1981, 124-129.

545. Zhmakin, A.I., N.P. Mende, and A.A. Fursenko (4). Study on three-dimensional interaction of a shock wave with an obstacle. ZhTF, no. 7, 1981, 1463-1467.

546. Zlatin, N.A., G.S. Pugachev, L.D. Volovets, Ye.L. Zil'berbrand, and S.A. Leont'yev (4). Interferometric recording of the parameters of weak stress waves in solids. ZhTF, no. 7, 1981, 1503-1506.

547. Zubkov, Yu.N., and O.I. Kozlov (458). Measuring the mobility of domain walls in films with micron and submicron cylindric magnetic domains. Sb 24, 82-85.

548. Zvereva, G.M., and L.M. Pustyl'nikov (0). Controlling a distributed physical-chemical system under the action of a moving laser beam. Sb 40, 213-216.

## 2. Laser-Excited Optical Effects

549. Bokov, N.A., and N.S. Andreyev (0). Depolarization of light during optical scattering by silicon dioxide in single phase sodium silicate glasses. FiKhS, no. 4, 1981, 509-511.

550. Doubrava, P., M. Zavetova, and A. Abraham (0). Photoinduced changes of the optical properties in amorphous As-Se layers. Sb 16, 219. (RZhF, 8/81, 8Yel368)

551. Frumar, M., H. Ticha, M. Vlcek, J. Klikorka, and L. Tichy (NS). Photostructural changes in some ternary Ge-Sb-S chalcogenide layers. CJP, v. B31, no. 4, 1981, 441-446. (RZhF, 8/81, 8Yel378)

552. Glinchuk, K.D., K. Lukat, and V.Ye. Rodionov (6). Kinetics of impurity luminescence quenching in gallium arsenide. FTP, no. 7, 1981, 1337-1342.

553. Glinchuk, K.D., K. Lukat, and V.Ye. Rodionov (6). Study on the kinetics of impurity luminescence quenching in GaAs crystals under laser excitation. Sb 2, 69-75.

554. Goede, O., and R. Mueller (NS). Calorimetric measurement of luminescence quantum efficiency in crystals. PSS, v. B103, no. 1, 1981, K75-K79. (RZhF, 7/81, 7D1089)

555. Gule, Ye.G., L.F. Gudymenko, and M.P. Lisitsa (6). Band shape and the mechanism for radiative recombination of biexcitons in ZnO. FTT, no. 7, 1981, 1970-1975.

556. Il'inova, T.M., A.A. Fortygin, and G.A. Cherdynseva (2). Intraband and cross-sectional relaxation times in semiconductors. IAN Fiz, no. 8, 1981, 1485-1489.

557. Karaman, M.I., O.S. Kleymenova, and V.P. Mushinskiy (0). Stimulated change in the optical properties of amorphous layers of gallium chalcogenides under the action of a CO<sub>2</sub> laser. Sb 16, 234-237. (RZhF, 8/81, 8Yel380)

558. Katsaurov, L.N., V.V. Krasnopovertsev, and K. Nurgaliyev (485). Diffusion of implanted lithium ions in silicon under the effect of protons and deuterons. KSpF, no. 7, 1981, 48-53.

559. Krutyakova, V.P., and V.N. Smirnov (0). Subthreshold luminescent spectra of alkali halide crystal surfaces under the action of CO<sub>2</sub> laser pulses. ZhTF, no. 8, 1981, 1671-1675.

560. Kurbatov, L.N., A.V. Mezheritskiy, I.M. Ovchinnikov, N.V. Sorokonovitskiy, Ye.S. Banin, T.F. Terekhovich, and O.B. Yatsenko (0). Temperature dependence of the relaxation time for photoconductivity in gallium-doped lead-tin telluride. Sb 4, 153-155. (RZhF, 7/81, 7Yel143)

561. Leble, S.B., U.Kh. Kopvillem, and A.S. Labuntsev (0). Using phase memory effects in physics research. Sb 21, 47-59.

562. Likhanskiy, V.V. (0). Nonadiabatic pumping of degenerate two-level systems by laser radiation with a continuously varying frequency. KE, no. 8, 1981, 1849-1851.

563. Linnik, L.F., and L.G. Linnik (6). Operating characteristics of optically controlled semiconductor switches at high injection levels. Sb 2, 107-108.

564. Linnik, L.F., L.G. Linnik, and O.F. Manita (6). Studying semiconductors under laser irradiation. Sb 2, 109-111.

565. Logvinov, V.I., and V.A. Tsar'kov (7). Study on scattering of 3.51  $\mu\text{m}$  radiation. OMP, no. 7, 1981, 9-12.

566. Lyubin, V.M., and V.A. Fedorov (4). Reversible optical bleaching effect in As-S chalcogenide glassy semiconductor system films. FTT, no. 8, 1981, 2315-2320.

567. Makarov, A.G., A.A. Manenkov, G.N. Mikhaylova, and A.S. Seferov (1). Effect of phonon wind on the condensation of electron-hole drops in inhomogeneously deformed germanium. DAN SSSR, v. 259, no. 5, 1981, 1085-1088.

568. Malevich, I.A., B.P. Ustinov, V.M. Baranchikov, V.G. Sovtus, and S.I. Chubarov (334). Multichannel adaptive stroboscopic signal shape analyzer. Sb 5, 28-30.

569. Mitkova, M.I., Z. Boncheva-Mladenova, and Ts.I. Tsvetkov (0). Study on the process for irradiating chalcogenide glasses by an He-Ne laser. Sb 16, 221-224. (RZhF, 8/81, 8Yel382)

570. Ogorodnikov, B.K., and T. Totiyeva (0). Recombination of nonequilibrium charge carriers in n-Cd<sub>0.3</sub>Hg<sub>0.7</sub>Te. Sb 4, 126. (RZhF, 7/81, 7Yell169)

571. Orlov, A.N., R.P. Petrov, and Yu.N. Petrov (1). Diffusion of a sorbed gas through a finely porous filter. ZhTF, no. 8, 1981, 1681-1684.

572. Pivtsov, V.S., S.G. Rautian, V.P. Safonov, K.G. Folin, and B.M. Chernobrod (75). Study on cooperative Raman scattering. ZhETF, v. 81, no. 2, 1981, 468-479.

573. Rokakh, A.G., V.A. Kuznetsov, and Ye.Ye. Starchayeva (99). Optical control of the spectral characteristics of CdSe-VO<sub>2</sub> heterojunctions. FTP, no. 7, 1981, 1425-1428.

574. Sharlandzhiev, P., M. Miteva, E. Mitev, and T. Todorov (0). Photoinduced changes in optical constants of thin evaporated amorphous semiconductors, determined by photometric and holographic methods. Sb 16, 216-218. (RZhF, 8/81, 8Yel383)

575. Sheyndlin, M.A., A.V. Kirillin, L.M. Kheyfets, and K.A. Khodakov (74). High-speed automated system for high temperature (2500-6000 K) measurements during laser heating. TVT, no. 4, 1981, 839-848.

576. Teteris, Ya.A., G.Ya. Skin', and V.Ya. Pashkevich (0). Kinetics of photoinduced changes in the optical density of As-Se thin films. Sb 16, 220. (RZhF, 8/81, 8Yel372)

577. Vakulenko, O.V., and V.A. Skryshevskiy (51). Recombination processes of optically excited charge carriers in GaAs<Cr>. UFZh, no. 8, 1981, 1341-1346.

578. Vavilov, V.S., G.N. Galkin, and M.S. Yepifanov (1). Optically excited electron-hole plasma in semiconductors. Lit fiz sb, no. 4, 1981, 57-71.

579. Vitlina, R.Z., and A.V. Chaplik (0). Nonresonant radiative charge transfer. OiS, v. 51, no. 1, 1981, 186-188.

580. Voytsekhovskiy, A.V., Yu.V. Lilenko, L.N. Limarenko, and Ye.P. Lepatinskaya (0). Photoconductivity of p-Cd<sub>0.2</sub>Hg<sub>0.8</sub>Te-Sb 4, 111-113. (RZhF, 7/81, 7Yell45)

581. Zaretskiy, D.F., and V.V. Lomonosov (23). Nuclear reactions in a laser radiation field. ZhETF, v. 81, no. 2, 1981, 429-433.

582. Zuyev, V.A., and T.M. Kalandadze (0). Study on IR absorption and capacitive photo emf during laser excitation of films. AN GruzSSR. Soobshcheniye, v. 104, no. 3, 1981, 585-588.

583. Zuyeva, T.V., V.S. Letokhov, and V.G. Minogin (72). Theory on retarding beams of atoms by resonant laser radiation. ZhETF, v. 81, no. 1, 1981, 84-95.

584. Zuyeva, T.V., and V.G. Minogin (0). Optimum retarding of atoms by resonant laser radiation. ZhTF P, no. 15, 1981, 953-956.

### 3. Laser Spectroscopy

585. Agafontsev, V.F. (19). Optical properties of zinc orthotitanate powder. Tr 6, 69-72. (RZhF, 7/81, 7D859)

586. Ageyev, V.A., V.D. Yegorov, and S.G. Komissarov (0). Two-channel optoacoustic spectrometer. ZhPS, v. 35, no. 2, 1981, 348-352.

587. Aleksandrov, Ye.B., and V.S. Zapasskiy (0). Magnetic resonance in a Faraday rotation noise spectrum. ZhETF, v. 81, no. 1981, 132-138.

588. Apanasevich, P.A., V.V. Kvach, V.P. Kozich, and V.A. Orlovich (3).  
Measuring the invariants in a Raman scattering tensor by active  
Raman spectroscopy. IAN Fiz, no. 8, 1981, 1527-1531.

589. Aslanyan, L.S., A.F. Bunkin, and S.A. Chupryna (2). Coherent  
ellipsometry study on superimposed Raman lines in cyclohexane.  
VMU, no. 4, 1981, 62-65.

590. Auzin'sh, M.P., I.Ya. Pirags, R.S. Ferber, and O.A. Shmit (109).  
Relaxation kinetics of the population in the ground state of K<sub>2</sub>  
during collisions with Ar and Kr. Sb 7, 50-56.

591. Avanesov, A.G., T.T. Basiyev, Yu.K. Voron'ko, B.I. Denker, G.V. Maksimova, V.V. Osiko, and V.S. Fedorov (0). Study on electron-phonon  
interaction of Sm<sup>3+</sup> ions in glass by selective laser excitation.  
OIS, v. 51, no. 1, 1981, 148-153.

592. Aver'yanov, Ye.M., and V.F. Shabanov (210). Fluctuations in the  
ordering parameters of a nematic phase liquid crystal. FTT,  
no. 7, 1981, 1917-1920.

593. Azikov, B.S., I.V. Kamenskaya, M.A. Krivov, and T.N. Pegova (47).  
Photoluminescence in ion-doped layers of GaAs produced with  
implanted Zn<sup>+</sup> ions. FTP, no. 7, 1981, 1325-1329.

594. Baronov, G.S., A.D. Britov, S.M. Karavayev, A.I. Karchevskiy, L.N. Kurbatov, S.Yu. Kulikov, A.V. Merzlyakov, and S.D. Sivachenko (0).  
Structure of the molecular spectra of supercooled hexafluorides of  
various elements recorded by a spectrometer using injection lasers.  
IAN Fiz, no. 8, 1981, 1500-1503.

595. Barta, Ch., M.Ye. Boyko, M.F. Limonov, and Yu.F. Markov (4). Phase transition in  $Hg_2Cl_{1.2}Br_{0.8}$  crystals. FTT, no. 7, 1981, 1931-1935.

596. Bazyk, A.I., V.F. Kovalenko, G.P. Peka, and V.A. Petryakov (0). Study on the dependence of variband  $Al_xGa_{1-x}As$  solid solution parameters on composition, using photoluminescence methods. FTT, no. 7, 1981, 1363-1367.

597. Blokhin, A.P., and V.A. Tolkachev (0). Polarization of fluorescence from free polyatomic molecules. OiS, v. 51, no. 2, 1981, 278-284.

598. Boettger, H., and P. Kleinert (NS). Calculation of vibrational state density and long wavelength spectral density of compositionally disordered chains. PSS, v. B103, no. 1, 1981, 221-229. (RZhF, 7/81, 7D712)

599. Bogdanov, V.L., and V.P. Klochkov (0). Shpol'skiy effect in the Raman spectra of electron vibrations. Ois, v. 51, no. 2, 1981, 214-216.

600. Buchin, A.V., S.I. Kort, Yu.N. Krivov, L.A. Kuznetsov-Pushchinskiy, S.V. Morozov, A.P. Tikhonov, V.I. Yakovlev, and V.I. Yanyuk (0). Spectrum analyzer. Otkr izobr, no. 27, 1981, 849094.

601. Burakov, V.S. (0). Development of a method for intracavity laser spectroscopy. ZhPS, v. 35, no. 2, 1981, 223-236.

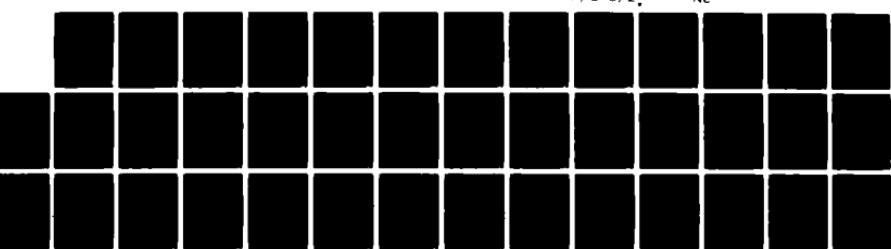
602. Buyalo, Ye.N., L.M. Zaytsev, V.N. Kokunova, Yu.I. Krasilov, L.A. Pospelova, and M.V. Senashenko (141). Luminophors based on cadmium and zinc sulfides. NM, no. 7, 1981, 1271-1274.

AD-A124 425 BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS NUMBER 54  
JULY-AUGUST 1981(U) DEFENSE INTELLIGENCE AGENCY  
WASHINGTON DC DIRECTORATE FOR SCI.. DEC 82  
UNCLASSIFIED DIA-DST-2700Z-005-82

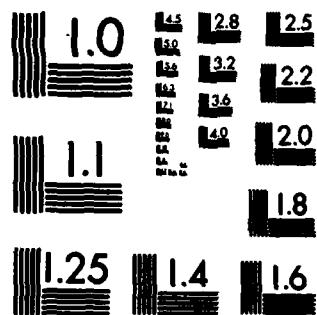
2/2

F/G 5/2

NL



END  
DATE  
83  
DTIC



MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

603. Chirvonyy, V.S., B.M. Dzhagarov, A.M. Shul'ga, and G.P. Gurinovich (3). Picosecond spectroscopy of porphyrin - Ni(II) complexes. Excited electronic states and photodissociation of axial ligands. DAN SSSR, v. 259, no. 5, 1981, 1256-1260.

604. Fomichev, V.V., V.A. Gagarina, O.I. Kondratov, L.A. Gribov, and K.I. Petrov (0). Study on vibrational spectra of lanthanide molybdates and tungstates. ZhNKh, no. 7, 1981, 1775-1781.

605. Gadzhiev, F.N., V.N. Zadkov, N.I. Koroteyev, R.Yu. Orlov, and I.L. Shumay (2). Comparative study on various systems for high-resolution four-photon spectroscopy of liquids. IAN Fiz, no. 8, 1981, 1519-1526.

606. Gayko, O.L., N.S. Leshenyuk, V.V. Nevdakh, Ya.I. Nekrashevich, and L.N. Orlov (0). Study on the absorption spectrum of  $\text{CH}_3\text{I}$  molecules using a stabilized tunable  $\text{CO}_2$  laser. ZhPS, v. 35, no. 1, 1981, 33-37.

607. Gaysler, V.A., V.M. Zaletin, A.F. Kravchenko, and A.S. Terekhov (181). Raman scattering study on the structural perfection of  $\text{HgI}_2$  crystals. Institut yadernykh issledovaniy AN UkrSSR. Preprint, no. KIYAI-81-24, 1981, 44-46.

608. Grigor'yev, N.N., A.V. Ovchinnikov, and M.V. Fok (1). Nontrivial kinetics of luminescence polarization in  $\text{ZnS:Eu}$  crystals. KSpF, no. 8, 1981, 25-30.

609. Grushetskiy, K.M., and A.A. Akhrem (0). Automated interpretation of spectra. DAN B, no. 4, 1981, 309-310. (RZhF, 7/81, 7D979)

610. Jodl, J.J., and F. Bolduan (NS). Laser induced fluorescence and Raman studies with KI:NO<sub>2</sub>. PSS, v. B103, no. 1, 1981, 297-310. (RZhF, 7/81, 7D757)

611. Kanehisa, M.A., and M. Balkanski (NS). Resonant secondary emission spectroscopy. PSS, v. B102, no. 1, 1980, 67-77. (RZhF, 8/81, 8D735)

612. Kipen', A.A., N.I. Yanushevskiy, and N.I. Vitrikhovskiy (5,6). P-bands in the spectra of radiation from strongly excited CdS single crystals. UFZh, no. 7, 1981, 1218-1220.

613. Komarov, S.A., V.V. Krasnikov, and V.S. Solomatin (0). Study on the spectral resolution of a nonlinear IR spectrometer using alkali metal vapors. OiS, v. 51, no. 1, 1981, 188-190.

614. Kondilenko, I.I., P.A. Korotkov, and G.S. Felinskiy (51). Dielectric properties of noncentral-symmetric crystals and their relationship to Raman scattering. Sb 2, 49-64.

615. Koroteyev, N.I. (2). Frequency dispersion of nonlinear susceptibilities in condensed media near single and multiphoton resonances. IAN Fiz, no. 8, 1981, 1504-1518.

616. Kostritskiy, S.M., A.Ye. Semenov, and Ye.V. Cherkasov (588). Angular dependence characteristics for spontaneous Raman scattering in uniaxial crystals. FTT, no. 7, 1981, 2090-2093.

617. Kravchenko, V.V., M.G. Zaytseva, V.M. Kopylov, M.I. Shkol'nik, and K.I. Petrov (0). Vibrational spectra of organosilazanes. ZhPS, v. 35, no. 1, 1981, 99-107.

618. Kwiecniak, M., and W. Wardzynski (NS). Effect of uniaxial compression on Raman scattering of light in ZnTe. Sb 3, 210-215. (RZhF, 8/81, 8Ye1332)

619. Lisitsa, M.P., N.R. Kulish, and A.F. Maznichenko (6). Effect of an intense e-m wave on the edge absorption spectrum of CdSe. FTP, no. 8, 1981, 1479-1485.

620. Lyskovich, A.B., I.M. Bolesta, and Kh. Martines (114). Absorption and luminescence spectra of cadmium bromide crystals doped with rare earth elements. UFZh, no. 8, 1981, 1278-1281.

621. Mamedov, S.B., M.D. Mikhaylov, and I.M. Pecheritsyn (12). Photo-induced structural transformation in Ge-Se system glasses. FKhS, no. 4, 1981, 503-506.

622. Mischke, W. (NS). Spectrometer for investigation of Brillouin light scattering. Opt app, no. 4, 1980, 373-379. (RZhF, 8/81, 8D899)

623. Munir, M., N.R. Nurtdinov, R. Stegmann (East German), and A.E. Yunovich (2). Effect of the degree of nitrogen doping and the level of excitation on photoluminescence from  $\text{GaAs}_{1-x}\text{P}_x\text{:N}$  with  $x$  equal to or greater than 0.67. FTP, no. 7, 1981, 1249-1254.

624. Nikitenko, V.A., S.G. Stoyukhin, V.I. Popolitov, and Yu.M. Mininzon (0). Exciton luminescence in CuI single crystals. OiS, v. 51, no. 1, 1981, 7-10.

625. Orlova, N.D., and L.A. Platonova (0). Band profile of isotropic scattering by methane dissolved in liquid freon. OiS, v. 51, no. 1, 1981, 15-17.

626. Osipova, L.P., and Yu.A. Ivashkin (0). Effect of defects on the electrooptic anharmonicity of crystalline quartz. FTT, no. 3, 1981, 919-921. (RZhF, 7/81, 7Ye698)

627. Pashuk, I.P., N.S. Pidziraylo, and M.G. Matsko (114). Exciton absorption, luminescence and resonant Raman scattering in  $\text{CsPbCl}_3$  and  $\text{CsPbBr}_3$  crystals at low temperatures. FTT, no. 7, 1981, 2162-2155.

628. Pogorelov, V.Ye., and G.I. Salivon (0). Vibrational relaxation in trihalogen substitutes of methane according to second order Raman spectra. Sb 41, 67-72. (RZhF, 8/81, 8D622)

629. Polivanov, Yu.N., and R.Sh. Sayakhov (0). Hyper Raman scattering from infrared active modes in calcite crystals. PSS, v. B103, no. 1, 1981, 89-92. (RZhF, 7/81, 7D764)

630. Raab, S., K. Hoffmann, M. Habbert (East Germans), M.V. Glushkov, and Yu.V. Kosichkin (1). Using a diode laser with an external resonator for high resolution spectroscopy. KE, no. 8, 1981, 1771-1775.

631. Remizov, A.B., F.S. Bilalov, G.G. Butenko, and A.A. Karellov (0). Vibrational spectra and conformations of  $\text{RSO}_2\text{CH}_2\text{X}$  sulfones. ZhPS, v. 35, no. 1, 1981, 114-121.

632. Salokhiddinov, K.I., I.M. Byteva, B.M. Dzhagerov, and G.P. Gurinovich (0). Study on sensitized luminescence from singlet oxygen solutions in the 1588 nm region. ZhPS, v. 35, no. 2, 1981, 280-284.

633. Samokhvalov, A.A., N.N. Loshkareva, Yu.P. Sukhorukov, A.F. Gunichev, Yu.S. Ponosov, M.I. Simonova, and G.K. Pokazan'yeva (421). Reflection and Raman spectra of  $Fe_{1-x}Cu_xCr_{2-x}S_4$ . Deposit at VINITI, no. 2266-81, 14 May 1981, 10 p. (RZhF, 8/81, 8Ye1791)

634. Shablayev, S.I., A.M. Danishevskiy, and V.K. Subashiyev (4). Two photon spectroscopy of  $KTaO_3$ ,  $Bi_{12}Ge(Si)O_{20}$  and SiC crystals. IAN Fiz, no. 8, 1981, 1490-1495.

635. Shapiro, B.I., V.P. Mikhaylov, M.I. Demchuk, A.F. Chernyavskiy, A.G. Vakar, and L.I. Mikheyeva (0). Study on infrachromatic photographic layers used in long exposure spectroscopy. ZhPS, v. 35, no. 1, 1981, 79-84.

636. Shelukhov, I.P., G.S. Zhdanov, and V.K. Milinchuk (122). Quantum efficiency of electron capture reactions in polyvinyl alcohol. KhVE, no. 4, 1981, 324-327.

637. Smolenskiy, G.A., I.G. Siniy, S.D. Prokhorova, A.A. Godovikov, R. Laykho, T. Levola, and Ye. Karayemyaki (4). Brillouin scattering in proustite. FTT, no. 7, 1981, 2017-2027.

638. Spiro, A.G., B.S. Neporent, B.D. Faynberg, and V.B. Shilov (0). Interpretation of the shape of the secondary emission spectrum (superluminescence and stimulated Raman scattering) from solutions of complex organic compounds. ZhPS, v. 35, no. 2, 1981, 285-291.

639. Suvorov, A.Ye. (193), M.P. Auzin'sh, I.Ya. Pirags, and R.S. Ferber (109). Relaxation kinetics of a population during thermal motion of molecules through a laser beam. Sb 7, 42-49.

640. Tamanis, M.Ya., and O.A. Shmit (109). Hanle effect in the ground state of  $^{130}\text{Te}_2$ . Sb 7, 80-83.

641. Tomin, V.I., and A.N. Rubinov (0). Spectroscopy of inhomogeneous configuration broadening in dye solutions. ZhPS, v. 35, no. 1, 1981, 237-251.

642. Valakh, M.Ya., and A.P. Litvinchuk (6). Laser Raman scattering in  $\text{Zn}_{1-x}\text{Cd}_x\text{Se}$  mixed semiconductors under resonance excitation. Sb 2, 40-49.

643. Yefimov, Yu.Ya., and Yu.I. Naberukhin (0). Structural interpretation of differences in the temperature transformation of valence vibration bands for OH groups in water and methanol. Zhurnal strukturnoy khimii, no. 2, 1981, 88-92. (RZhF, 8/81, 8Ye234)

644. Yemelin, V.Ya., N.V. Klassen, V.D. Negriy, and Yu.A. Osip'yan (66). Small-angle optical scattering from various types of dislocations in cadmium sulfide. FTT, no. 7, 1981, 2010-2016.

645. Zakharenkov, L.F., V.A. Kasatkin, F.P. Kesamanly, B.Ye. Samorukov, and M.A. Sokolova (29). Photoluminescence from epitaxial layers of  $\text{InP} < \text{Yb} >$ . FTP, no. 8, 1981, 1631-1632.

646. Zelenin, V.N., A.V. Kachanov, I.Ye. Konstantinov, O.N. Salimov, and I.P. Sipaylo (0). Device for high-temperature dispersion of materials and for determining the dimensions of forming particles. FiKhOM, no. 4, 1981, 47-50.

J. BEAM-TARGET INTERACTION

1. Metal Targets

647. Azizov, S.T., A.V. Zinov'yev, and V.B. Lugovskoy (202). Time-of-flight determinations of electron energy during laser irradiation of metals. ZhTF, no. 7, 1981, 1445-1448.

648. Bondarenko, A.V., Ye.V. Dan'shchikov, V.A. Dymshakov, F.V. Lebedev, and A.V. Ryazanov (23). Effect of a target on lasing. KE, no. 8, 1981, 1836-1839.

649. Bondarenko, Yu.A., I.N. Burdonskiy, V.V. Gavrilov, Ye.V. Zhuzhukalo, N.G. Koval'skiy, A.N. Kolomiyskiy, V.N. Kondrashov, L.S. Mkhitar'yan, M.I. Pergament, and A.I. Yaroslavskiy (0). Experimental study on the acceleration of thin foils under the effect of high-power laser pulses. ZhETF, v. 81, no. 1, 1981, 170-179.

650. Borodina, G.G., Ch.V. Kopetskiy, V.S. Kraposhin, N.V. Yedneral, Kh.A. Mazora (Cuban), Ya.G. Kletskin, Yu.A. Skakov, V.S. Aleynikov, and Yu.F. Bondarenko (152,66). Formation of amorphous structures in iron-based alloys during laser processing of surfaces. DAN SSSR, v. 259, no. 4, 1981, 826-829.

651. Burmistrov, A.V. (0). Effect of partial pressure of oxygen on the dynamics of heating copper by intense radiation. ZhTF, no. 8, 1981, 1733-1735.

652. Petrukhin, A.I., Yu.Ye. Pleshakov, V.A. Rybakov (0). Experimental study on the interaction of laser pulses with a target surrounded by a high-pressure gas in plane geometries. FiKhOM, no. 4, 1981, 3-9.

653. Uglov, A.A., and A.L. Galiyev (0). Absorption of nitrogen by molten metal in the region of interaction with laser radiation. FiKhOM, no. 4, 1981, 10-14.

654. Vedenov, A.A., G.G. Gladush, and A.N. Yavokhin (23). Theory on stationary optical breakdown of gases near a metallic surface. KE, no. 7, 1981, 1485-1490.

655. Yakubovich, O.V., V.Ye. Matyushkov, V.G. Ananich, and I.Ye. Zavin (0). Soldering electronic products by a laser beam. Sb 42, 57-59.  
(RZhRadiot, 8/81, 8Ye395)

656. Yedneral, N.V. V.A. Lyakishev, Yu.A. Skakov, and I.Ya. Spektor (0). Microstructure of U10A steel after laser irradiation and quenching from the liquid phase. FiKhOM, no. 4, 1981, 24-28.

657. Zlatin, N.A., G.S. Pugachev, L.D. Volovets, and S.A. Leont'yev (4). Study on the development characteristics of submicroscopic cracks during the destruction of solids by pulsed microsecond stresses. ZhTF, no. 7, 1981, 1507-1514.

## 2. Dielectric Targets

658. Anisimov, S.I., V.A. Gal'burt, and M.I. Tribel'skiy (73). Effect of electron thermal conductivity on the threshold and dynamics of optical breakdown in dielectrics with microimpurities. KE, no. 8, 1980, 1671-1679.

659. D'yakov, V.A., G.V. Luchinskiy, N.M. Rubinina, and A.I. Kholodnykh (2). Effect of high-temperature diffusion annealing on the optical homogeneity of lithium metaniobate single crystals. ZhTF, no. 7, 1981, 1557-1560.

660. Gusev, G.P., T.I. Musiyenko, G.T. Petrovskiy, L.R. Savanovich, and A.V. Shatilov (7). Statistics of destruction in microscopically inhomogeneous optical media under repeated optical interaction. OMP, no. 8, 1981, 35-38.

661. Ivanov, A.I., A.A. Poplavskiy, and O.G. Rudina (7). Study on the effect of optical interference and film microstructure on the destruction threshold for dielectric films. OMP, no. 7, 1981, 6-8.

662. Polivanov, Yu.V., L.V. Rylina, T.P. Dmitriyeva, D.I. Zhitomirskaya, V.I. Smirnova, L.V. Shagurin, and N.N. El'manovich (0). Effect of laser radiation on the electrical insulation parameters of dielectric printed board material. Elektrotehnika, no. 8, 1981, 49-50.

663. Vassilev, Ya.T., M.I. Georgieva, T.A. Doneva, and A.A. Tonchev (NS). Damage to optical glass by picosecond laser pulses. Bolgarskiy fizicheskiy zhurnal, no. 1, 1981, 100-106. (RZhF, 7/81, 7Ye733)

### 3. Semiconductor Targets

664. Bertolotti, M. (Italian), V.V. Yemtsev, T.V. Mashovets (4), and P. Scudieri (Italian). Laser annealing of point defects in germanium. FTP, no. 8, 1981, 1639-1641.

665. Dolgolenko, A.P., and V.N. Pavlovich (181). Resonant laser annealing of radiation defects. FTP, no. 8, 1981, 1603-1606.

666. Dvurechenskiy, A.V., T.N. Mustafin, L.S. Smirnov, H.D. Geiler, G. Goetz, and U. Jahn (0). Influence of the thickness of damaged layers on the migration of dopants during laser annealing in implanted silicon. Source not given. (RZhF, 8/81, 8Ye865)

667. Khasanov, D.K., and A.Ya. Yafasov (181). Ion laser method for fabricating position-sensitive detectors. Institut yadernykh issledovaniy AN UkrSSR. Preprint, no. KIYal-81-24, 1981, 42-43.

668. Khaybullin, I.G., Ye.I. Shtyrkov, and M.M. Zaripov (38). Laser annealing of doped semiconductors. IAN Fiz, no. 8, 1981, 1464-1473.

669. Lazneva, E.F., I.N. Aleksandrov, and A.V. Tul'yev (12). Energy distribution of neutral components in cadmium selenide vaporized by laser radiation. ZhTF, no. 8, 1981, 1690-1694.

670. Libenson, M.N., Ya.A. Oksman, and A.A. Semenov (0). The role of thermochemical phenomena in the radiative erosion of gallium arsenide. ZhTF, no. 7, 1981, 1468-1477.

671. Prutskov, Ye.G., Yu.N. Nikiforov, and V.A. Yanushkevich (2?).  
The nature of defects in n-Si irradiated by high-power laser pulses.  
FTP, no. 8, 1981, 1620-1622.

672. Uglov, A.A., A.V. Kornilov, and A.L. Karayev (0). Thermal and energy characteristics of laser scribing of silicon plates.  
FiKhOM, no. 4, 1981, 29-33.

4. Miscellaneous Studies

673. Berchenko, Ye.A., A.V. Koshkin, A.P. Sobolev, and B.T. Fedyushin (0).  
Effect of the laser radiation wavelength on the threshold for plasma formation during irradiation of opaque materials. KE, no. 7, 1981, 1582-1584.

674. Borzykh, A.A. (0). A spatial self-modeling problem on the supersonic wedging of an elastic body. Prikladnaya matematika i mehanika, no. 2, 1981, 348-355. (RZhMekh, 7/81, 7V145)

675. Dement'yev, D.A., V.I. Konov, P.I. Nikitin, and A.M. Prokhorov (1).  
Study on currents arising from optical breakdown of air near a conducting target. KE, no. 7, 1981, 1532-1539.

676. Kononenko, V.G., and A.K. Yemets (34). Effect of crystal temperature on the nature of damage induced in it by a thermal wave. UFZh, no. 7, 1981, 1206-1209.

677. Lyashenko, Ye.I., V.V. Shumrikov, and L.N. Pivovarova (642). Thermodynamic analyses of the composition of products from laser destruction of sandstone. Deposit at VINITI, no. 2434-81, 26 May 1981, 10 p. (RZhRadiot, 8/81, 8Ye437)

678. Lyashenko, Ye.I., and V.V. Shumrikov (642). Concentration and temperature of electrons in the plasma of a laser flare from sandstone. Deposit at VINITI, no. 2435-81, 26 May 1981, 11 p. (RZhRadiot, 8/81, 8Ye409)

679. Mikhnov, S.A., V.A. Kononov, V.I. Khomich, and V.M. Golomshtok (3). The Impul's laser marking device. Sb 5, 19-20.

680. Romanov, G.S., and Yu.A. Stankevich (0). Evaluating the recoil pulse arising from the effect of laser radiation on an absorbing target in air. FiKhOM, no. 4, 1981, 15-23.

681. Spevak, I.S. (107). Thermal lens in elastic and viscoelastic plates. KE, no. 7, 1981, 1425-1435.

682. Tyurin, Yu.M., V.N. Burakin, A.A. Fedotov, D.N. Sheremet'yev, N.I. Pervezentsev, and E.M. Simonovskiy (0). Device for optical marking of object surfaces. Otkr izobr, no. 26, 1981, 847020.

K. PLASMA GENERATION AND DIAGNOSTICS

683. Bedilov, M.R., P.K. Khabibullayev, D. Kuramatov, and A. Kholbayev (0). Energy spectra of the  $Be^{+4}$ ,  $B^{+5}$ ,  $C^{+6}$  and  $Al^{+13}$  nuclei obtained by a laser beam. DAN Uz, no. 10, 1980, 19-20. (RZhF, 8/81, 8D1387)

684. Bedilov, M.R., P.K. Khabibullayev, and T.G. Tsoy (0). Energy spectra of ions recorded from the exit face of a target while a laser beam is shot through it. DAN Uz, no. 1, 1981, 24-25. (RZhF, 7/81, 7G199)

685. Bykovskiy, Yu.A. (0). Laser sources of heavy ions. Sb 29, 93-128. (RZhF, 7/81, 7V339)

686. Bykovskiy, Yu.A., V.B. Lagoda, and A.N. Oblizin (16). Local plasma formation of a high-current pinch discharge as a source of radiation for microscopic x-ray diffraction analysis. ZhTF P, no. 15, 1981, 942-944.

687. Gorbunov, L.M., and A.S. Shirokov (1). Angular characteristics of the stimulated Raman spectrum in a laser plasma. KSpF, no. 8 1981, 3-7.

688. Gorbunov, L.M. (1). Amplification of reflected light in a dispersing laser plasma. ZhETF, v. 81, no. 1, 1981, 146-150.

689. Ilyukhin, A.A., G.V. Koloshnikov, A.Ye. Kramida, G.V. Peregudov, M.Ye. Plotkin, Ye.N. Ragozin, and V.A. Chirkov (1). Measuring the electron temperature profile in a laser plasma from relative populations of levels in hydrogen-like ions. KE, no. 8, 1981, 1776-1782.

690. L'vov, O.I., and V.N. Timoshchenko (12). Theory on dispersion of a partially ionized laser plasma. Fizika plazmy, no. 4, 1981, 828-831.

691. Manzon, B.M. (1). Accelerating macroparticles for controlled thermonuclear fusion. UFN, v. 134, no. 4, 1981, 611-639.

692. Mazing, M.A., V.V. Mal'kov, A.P. Shevel'ko, and M.R. Shpol'skiy (1). Characteristic curves of UF-VR photographic film exposed to soft x-rays in a laser plasma at 2.6-11 Å. Fizicheskiy institut AN SSSR. Preprint, no. 67, 1981, 12 p. (RZhF, 8/81, 8G620)

693. Plotkin, M.Ye., and Ye.N. Ragozin (1). Ionization state of a laser plasma. KE, no. 8, 1981, 1721-1727.

694. Plotkin, M.Ye., and Ye.N. Ragozin (1). Shape of the c-w x-ray spectrum of a laser plasma. KE, no. 8, 1981, 1834-1836.

695. Preobrazhenskiy, N.G. (193). Problem of radiation capture in studies on fast-flow processes. Sb 7, 99-124.

696. Salakhov, M.Kh., I.S. Fishman, P.S. Semin, and Ye.V. Sarandayev (11). Computer-aided optical diagnostics of a dense plasma by the absorption spectrum. IVUZ Fiz, no. 7, 1981, 11-16.

697. Saykia, P. (14). Angular characteristics of the Brillouin spectrum for a laser plasma during strong quenching of acoustic waves. Fizika plazmy, no. 4, 1981, 832-837.

### III. MONOGRAPHS, BOOKS, CONFERENCE PROCEEDINGS

698. Akustoopticheskiye metody i tekhnika obrabotki informatsii  
(Acoustooptic methods and techniques for information processing).  
Leningradskiy institut aviationskogo priborostroyeniya. Mezivuzovskiy  
sbornik, no. 142. Edited by S.V. Kulakov (277,110). Leningradskiy  
elektrotehnicheskiy institut, 1980, 131 p. (KL, 32/81, 29683)

699. Alekseyev, N.Ye., V.P. Gapontsev, M.Ye. Zhabotinskiy, V.B. Kravchenko,  
and Yu.P. Rudnitskiy (0). Lazernyye fosfatnyye stekla (Phosphate  
laser glasses). Moskva, Nauka, 1980, 352 p. (RZhF, 7/81, 7D1265)

700. Atakhodzhayev, A.K., and F.Kh. Tukhvatullin (0). Spektral'noye  
raspredeleniye intensivnosti v kryle linii rasseyaniya zhidkostey  
i rastvorov (Spectral distribution of intensity in the scattering  
line wing of liquids and solutions). Tashkent, Fan, 1981, 123 p.  
(RZhF, 7/81, 7D576)

701. Begunov, B.N., N.P. Zakaznov, S.I. Kiryushin, and V.I. Kuzichev (0).  
Teoriya opticheskikh sistem (Theory of optical systems). Moskva,  
Mashinostroyeniye, 1981, 431 p. (RZhF, 7/81, 7A40)

702. Dinamicheskiye protsessy v okeane i atmosfere (Dynamic processes in  
the ocean and atmosphere). Edited by U.Kh. Kopvillem and A.V.  
Alekseyev (511). Tikhookeanskiy okeanologicheskiy institut  
Dal'nevostochnogo nauchnogo tsentra AN SSSR. Vladivostok, 1981, 174 p.

703. Elektronnoye poluprovodnikovoye priborostroyeniye (Electronic semiconductor instrument manufacture). Novosibirskiy elektro-tehnicheskiy institut. Mezhvuzovskiy sbornik nauchnykh trudov. Edited by V.S. Shadrin (327). Novosibirsk, 1980, 199 p. (RZhF, 8/81, 8A162)

704. Fizicheskiye yavleniya v poluprovovnikakh. Fizicheskiye nauki (Physical phenomena in semiconductors. Physical sciences). Mezhvuzovskiy sbornik. Edited by V.P. Mushinskiy (0). Kishinev, Shtiintsa, 1981, 91 p. (RZhF, 8/81, 8Ye12)

705. 3. Frühjahrsschule Experimentelle Methoden der Festkörpermechanik (Third Spring School on Experimental Methods of Solid Mechanics). Eisenhüttenstadt, 14-18 April 1980. Reporte der Akademie der Wissenschaften der DDR. Zentralinstitut für Mathematik und Mechanik, no. 7, 1980, 1-269. (RZhMekh, 8/81, 8V1513)

706. Gik, L.D. (0). Akusticheskaya golografiya (Acoustic holography). Series: SOAN. Nauka i tekhnicheskiy progress (Science and technical progress). Edited by N.N. Puzyrev (0). Novosibirsk, Nauka, 64 p.

707. Horak, M., and A. Vitek (NS). Zpracovani a interpretace vibracnich spekter (Processing and interpretation of vibrational spectra). Series: Moderni metody v chemicky laborator no. 34, Praha, SNTL, 1980, 430 p. (RZhF, 7/81, 7D465)

708. Ispol'zovaniye nablyudeniy iskusstvennykh sputnikov zemli v geodezii i geofizike (Using satellite observations in geodesy and geophysics). Nauchnyye informatsii, no. 48. This issue edited by O.A. Petrova (0). Astronomicheskiy sovet AN SSSR. Moskva, 1981, 154 p.

709. Izmereniye parametrov informatsionno-izmeritel'nykh sistem na baze opticheskikh kvantovykh generatorov (Measuring the parameters of laser information and measuring systems). VNII metrologii. Trudy, issue number not given. Edited by V.S. Solov'yev (163). Leningrad, 1979, pp not given. (Cited in IT, no. 7, 1981, 81)

710. Katalog priborov (Catalog of instruments). Edited by V.S. Burakov and K.N. Tsvetayev (0). Minsk, Nauka i tekhnika, 1981, 120 p.

711. Magnetizm i elektronika. Ferritovyye plenki - sreda dlya zapominaniya (Magnetism and electronics. Ferrite films: a means for memory). Kuybyshevskiy gosudarstvennyy pedagogicheskiy institut. Mezhvuzovskiy sbornik nauchnykh trudov, no. 241. Edited by L.I. Koshkin (458). Kuybyshev, 1980, 168 p.

712. Meteorologicheskiye aspekty zagryazneniya atmosfery. Itogi sotrudnichestva sotsialisticheskikh stran (Meteorological aspects of air pollution. Results of the cooperation of socialist countries). Edited by M.Ye. Berlyand (0). Leningrad, Gidrometeoizdat, 1981, 143 p. (RZhGeofiz, 7/81, 7B41)

713. Nosov, Yu.R., and A.S. Sidorov (0). Optrony i ikh primeneniye (Optrons and their application). Moskva, Radio i svyaz', 1981, 279 p. (RZhF, 7/81, 7D1078)

714. Opticheskiye sistemy i elementy optiko-elektronnoy apparatury dlya issledovaniya bystroperekayushchikh protsessov (Optical systems and elements in optoelectronic apparatus for studying fast-flow processes). Edited by B.M. Stepanov (0). Moskva, Atomizdat, 1980, 124 p. (RZhF, 8/81, 8Zh498)

715. Opticheskoye priborostroyeniye (Optical instrument manufacture). Leningradskiy institut tochnoy mekhaniki i optiki. Sbornik nauchnykh trudov. Edited by N.V. Vasil'yeva and E.A. Stafeyeva (30). Leningrad, 1980, 119 p. (RZhF, 7/81, 7D922)

716. Prikladnyye metody fizicheskikh izmereniy (Applied methods for physical measurements). Edited by U.Kh. Kopvillem (510). Tikhookeanskiy okeanologicheskiy institut Dal'nevostochnogo nauchnogo tsentra AN SSSR. Vladivostok, 1981, 146 p.

717. Protsessy perenosa energii v parakh metallov (Processes of energy transfer in metal vapors). Latviskiy GU. Mezhvedomstvennyy sbornik nauchnykh trudov. Edited by E.K. Kraulin' (109). Riga, 1981, 195 p.

718. Sintez i rost sovershennykh kristallov i plenok poluprovodnikov (Synthesis and growth of semiconductor perfect crystals and films). Edited by L.N. Aleksandrov (0). Novosibirsk, Nauka, 1981, 266 p. (RZhF, 7/81, 7Ye371)

719. Sovetskaya nauka na novom rubezhe (Soviet science on a new frontier).  
Edited by A.V. Fokin (0). Authors listed on inside page: O.P. Grushnikov, S.I. Larin, R.S. Stepanov, and G.S. Cheremin (0).  
Moskva, Nauka, 1981, 120 p.

720. Sultanov, M.A. (530). Udarnoszhataya plazma v moshchnykh impul'snykh razryadakh (Shock-compressed plasma in high-power pulsed discharges). Edited by F.Kh. Khakimov (530). Institut khimii AN TadzhSSR. Dushanbe, Donish, 1981.

721. Tsifrovaya obrabotka signalov i yeye primeneniya (Digital signal processing and its applications). Edited by L.P. Yaroslavskiy (201). Institut problem peredachi informatsii AN SSSR. Moskva, Nauka, 1981, 224 p.

722. Tsybizov, V.D. (0). Lazer - instrument (The laser: a tool for drilling diamonds). Moskva, Moskovskiy rabochiy, 1981, 54 p.

723. XI Vsesoyuznaya konferentsiya po akustoelektronike i kuantovoy akustike, Dushanbe, 11-14 maya 1981. Materialy. Chasti 1-2 (11th All-Union Conference on Acoustoelectronics and Quantum Acoustics, Dushanbe, 11-14 May 1981. Papers. Parts 1-2). Edited by A.A. Adkhamov and A.N. Shklyar (0). Dushanbe, Donish, 1981, 273 p. (RZhF, 8/81, 8Zh683)

724. XI Vsesoyuznoye soveshchaniye po aktinometrii. Chast' 6.  
Distsantsionnoye zondirovaniye atmosfery i podstilayushchey  
poverkhnosti. Tezisy dokladov (11th All-Union Conference on  
Actinometry. Part 6. Remote probing of the atmosphere and of the  
underlying surface. Summaries of the reports). Edited by A.E.  
Kuusk (639). Institut astrofiziki i fiziki atmosfery AN EstSSR.  
Tallin, 1980, 142 p. (RZhGeofiz, 7/81, 7B40)

725. Vzaimodeystviye lazernogo izlucheniya s veshchestvom (Interaction  
of laser radiation with matter). Institut teoreticheskoy i  
prikladnoy mekhaniki SOAN. Sbornik nauchnykh trudov. Edited by  
A.G. Ponomarenko (193). Novosibirsk, 1980, 194 p. (RZhF, 8/81,  
8D1385)

#### IV. SOURCE ABBREVIATIONS

##### (CIRC Codens)

CJP	(CZYPA)	Czechoslovak Journal of Physics
DAN Arm	(DANAA)	Akademiya nauk Armyanskoy SSR. Doklady
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
DAN Uz	(DANUA)	Akademiya nauk Uzbekskoy SSR. Doklady
DBAN	(CRABA)	Bulgarska akademiya na naukite. Doklady
ETP	(EXPPA)	Experimentelle Technik der Physik
FA10	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FGVZA)	Fizika gorenija i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotki materialov
FiKhS	(FKSTD)	Fizika i khimiya stekla
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN B	(VABFA)	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Est	(ETFMB)	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika, matematika
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Lat	(LZFTA)	Akademiya nauk Latviyskiy SSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk
IAN Uz	(IUZFA)	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
I-FZh	(INFZA)	Inzhenerno-fizicheskiy zhurnal
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye

IVUZ Radioelektr (IVUZB)		Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz (IVYRA)		Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KE (KVEKA)		Kvantovaya elektronika
KhVE (KHVKA)		Khimiya vysokikh energiy
KL (KNLTA)		Knizhnaya letopis'
Kristal (KRISA)		Kristallografiya
KSpF (KRSFA)		Kratkiye soobshcheniya po fizike
Lit fiz sb (LFSBA)		Litovskiy fizicheskiy sbornik
MZhIG (IMZGA)		Akademiya nauk SSSR. Izvestiya. Mekhaniki zhidkosti i gaza
NM (IVNMA)		Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS (OPSPA)		Optika i spektroskopiya
OMP (OPMPA)		Optiko-mekhanicheskaya promyshlennost'
Opt app (OPAPB)		Optica applicata [Poland]
Otkr izobr (OIPOB)		Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PSS (PSSBB)		Physica Status Solidi (B). Basic Research
PSU (PRSUB)		Pribory i sistemy upravleniya
PTE (PRTEA)		Pribory i tekhnika eksperimenta
RAWZMuM (-----)		Reporte der Akademie der Wissenschaften der DDR. Zentralinstitut für Mathematik und Mechanik
RiE (RAELA)		Radiotekhnika i elektronika
RZhF (RZFZA)		Referativnyy zhurnal. Fizika
RZhGeofiz (RZGFA)		Referativnyy zhurnal. Geofizika
RZhMekh (RZMKA)		Referativnyy zhurnal. Mekhanika
RZhRadiot (RZRAB)		Referativnyy zhurnal. Radiotekhnika
Sbl	Sbornik	VNI monokristallov, stantsionnykh materialov i osobu chistykh khimicheskikh veshchestv. Sbornik nauchnykh trudov. 1980.

Sb2 *Kvantovaya elektronika*, no. 21, Kiyev, Naukova dumka, 1981.

Sb3 *Prace Institutu fizyki PAN*, no. 82, 1981.

Sb4 *Poluprovodniki s uzkoy zapreshchennoy zony i polumetally. Vsesoyuznyy simpozium. 5th. Materialy. Part 1. L'vov, 1980.*

Sb5 *Katalog priborov. Minsk, Nauka i tekhnika, 1981.*

Sb6 *International Symposium on the Technology of Communications and Photon-Detectors. 9th. Visegrad, 1980. Proceedings. Vol 1. Budapest, year of publication not given.*

Sb7 *Protsessy perenosa energii v parakh metallov. Latviyskiy GU. Mezhvedomstvennyy sbornik nauchnykh trudov. Riga, 1981.*

Sb8 *Fizika gidrodinamiki i teplovyye protsessy. Novosibirsk, 1980.*

Sb9 *Natsional'naya konferentsiya po atomnoy spektroskopii s mezhdunarodnym uchestiyem. 8th. Varna, 1978. Doklady. Place of publication not given, year of publication not given.*

Sb10 *Vsesoyuznaya konferentsiya po akustoelektronike i kvantovoy akustike. 11th. Dushanbe, 11-14 May 1981. Materialy. Part 2. Dushanbe, 1981.*

Sb11 *Leningradskiy institut aviatsionnogo priborostroyeniya. Mezhvuzovskiy sbornik, no. 142, 1980.*

Sb12 *Nekotoryye problemy ispol'zovaniya magnitnykh plenok dlya registratsii informatsii. Moskva, 1980.*

Sb13 *Voprosy formirovaniya i obrabotki signalov v radiotekhnicheskikh sistemakh, no. 5, Taganrog, 1981.*

Sb14 *Proyektirovaniye antenn i ustroystv SVCh s primeneniem EVM. Moskva, 1980.*

Sb15 *Fizicheskiye yavleniya v poluprovodnikakh. Kishinev, 1981.*

Sb16 *Fizicheskiye yavleniya v nekristallicheskikh poluprovodnikakh. Materialy konferentsii. Amorfnyye poluprovodnikovy-80, Kishinev, 1980. Kishinev, 1980.*

Sb17 *Dinamicheskiye protsessy v okeane i atmosfere. Tikhookeanskiy okeanologicheskiy institut Dal'nevostochnogo nauchnogo tsentra AN SSSR. Vladivostok, 1981.*

Sb18 *Problemy umstvennogo truda, no. 4, Moskovskiy GU, 1977.*

Sb19 *Geodeziya i fotogrammetriya. Rostov-na-Donu, 1980.*

Sb20 *Nauchnyye informatsii, no. 48. Astronomicheskiy sovet AN SSSR. Moskva, 1981.*

Sb21 *Prikladnyye metody fizicheskikh izmereniy. Tikhookeanskiy okeanologicheskiy institut Dal'nevostochnogo nauchnogo tsentra AN SSSR. Vladivostok, 1981.*

Sb22 *Dinamika sploshnoy sredy*, no. 48, Moskva, 1980.

Sb23 *Fiziko-tehnologicheskiye osnovy integral'nykh elementov EVM*. Institut kibernetiki AN UkrSSR. Kiyev, 1981.

Sb24 *Magnetizm i elektronika. Ferritovyye plamki - sreda dlya zapominaniya*. Kuybyshevskiy gos ped institut. Mezhvuzovskiy sbornik nauchnykh trudov, no. 241, Kuybyshev, 1980.

Sb25 *Voprosy avtomatiki, elektroniki i sistem energosnabzheniya na zhelezodorozhnom transporte*. Moskva, 1980. Deposit at TsNIITEI MPS, no. 1379/81, 11 March 1981.

Sb26 *Prikladnaya geometriya i grafika*. Rostov-na-Donu. Deposit at VINITI, no. 1960-81, 5 May 1981.

Sb27 *Tsifrovaya obrabotka signalov i yeye primeneniya*. Institut problem peredachi informatsii AN SSSR. Moskva, Nauka, 1981.

Sb28 *Prochnost' materialov i elementov konstruktsii pri zvukovykh i ul'trazvukovykh chastotakh nagruzheniya*. Vsesoyuznyy seminar. 2nd. Kiyev, 19878. Doklady. Kiyev, 1980.

Sb29 *Vsesoyuznoye soveshchaniye po uskoritelyam zaryazhennykh chastits*. 6th. Dubna, 11-13 Oct 1978. Trudy. Vol. 2, Dubna, 1979.

Sb30 *Raschet teplomassoobmena v energokhimicheskikh protsessakh*. Institut teplofiziki SOAN. Novosibirsk, 1981.

Sb31 *Primeneniye golografii v meditsine i biologii*. Leningrad, Nauka, 1977.

Sb32 *Voprosy yestestvenno-matematicheskogo obrazovaniya v pedagogicheskem vuze*. Minsk, 1980.

Sb33 *Uchenyye zapiski TsAGI*, no. 4, 1981.

Sb34 *International Seminar of Magnetosphere, Ionosphere and Interplanetary Space*. 2nd. Warsaw, 21-23 June 1979. Artificial Satellites, no. 3, 1980.

Sb35 *Elektronnoye poluprovodnikovoye priborostroyeniye*. Novosibirskiy elektrotehnicheskiy institut. Mezhvuzovskiy sbornik nauchnykh trudov. Novosibirsk, 1980.

Sb36 *Teplo- i massoperenos: fizicheskiye osnovy i metody issledovaniya*. Minsk, 1980.

Sb37 *Upravleniye slozhnymi dinamicheskimi protsessami*. Institut kibernetiki AN UkrSSR. Kiyev, 1981.

Sb38 *Turbulentnyye sdvigovyye techeniya nen'yutonovskikh zhidkostey*. Institut teplofiziki SOAN. Novosibirsk, 1981.

Sb39 *Mekhanizatsiya stroitel'stva*, no. 4, 1981.

Sb40		Modelirovaniye i issledovaniye elektromekhanicheskikh sistem avtomaticheskogo upravleniya. Dal'nevostochnyy nauchnyy tsentr AN SSSR. Vladivostok, 1981.
Sb41		Fizika zhidkogo sostoyaniya, no. 8, Kiyev, 1980.
Sb42		Avtomaticheskaya svarka, no. 4, 1981.
SCF	(SCEFA)	Studii si cercetari de fizica
TiEKh	(TEKHA)	Teoreticheskaya i eksperimental'naya khimiya
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Tr1	Trudy	Leningradskiy elektrotehnicheskiy institut. Izvestiya, no. 277, 1980.
Tr2		Moskovskiy energeticheskiy institut. Trudy, no. 463, 1980.
Tr3		Institut eksperimental'noy meteorologii. Trudy, no. 10/84, 1981.
Tr4		VNI kinofotoinstitut. Trudy, no. 102, 1980.
Tr5		Nikolayevskiy korablestroitel'skiy institut. Trudy, no. 162, 1980.
Tr6		Moskovskiy energeticheskiy institut. Trudy, no. 512, 1981.
TVT	(TVYTA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya
ZhETF	(ZETFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	(ZFKHA)	Zhurnal fizicheskoy khimii
ZhNKh	(ZNOKA)	Zhurnal neorganicheskoy khimii
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki

## V. AUTHOR AFFILIATIONS

NS. Non-Soviet

0. Affiliation not given

1. Physics Institute imeni Lebedev, AN SSSR, Moscow (Fizicheskiy institut imeni Lebedeva AN SSSR).

2. Moscow State University (Moskovskiy gosudarstvennyy universitet).

3. Institute of Physics, AN BSSR, Minsk (Institut fiziki AN BSSR).

4. Physicotechnical Institute im Ioffe, Leningrad (Fiziko-tehnicheskiy institut im Ioffe).

5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR).

6. Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR).

7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).

10. Institute of Semiconductor Physics, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov Sibirskego otdeleniya AN SSSR).

11. Kazan' State University (Kazanskiy GU).

12. Leningrad State University (Leningradskiy GU).

13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografii AN SSSR).

14. University of Friendship Among Nations im Lumumba, Moscow (Universitet druzhby narodov im Lumumby).

15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR).

16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).

17. Institute of Problems of Mechanics, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).

18. Institute of General and Inorganic Chemistry im Kurnakov, AN SSSR, Moscow (Institut obshchey i neorganicheskoy khimii im Kurnakova AN SSSR).

19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).

20. All Union Scientific Research Institute of Physicotechnical and Electronic Measurements, Moscow (VNII fiziko-tehnicheskikh i elektronnykh izmereniy).

22. Institute of metallurgy im Baykov, Moscow (Institut metallurgii im Baykova).

23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).

29. Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).

30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).

34. Khar'kov, State University (Khar'kovskiy GU).

37. Yerevan State University (Yerevanskiy GU).

38. Kazan' Physicotechnical Institute (Kazanskiy fiziko-tehnicheskiy institut).

40. Tbilisi State University (Tbilisskiy GU).

41. Rostov-on-Don State University (Rostovskiy-na-Donu GU).

43. Ural State University, Sverdlovsk (Ural'skiy GU).

47. Siberian Physicotechnical Institute im Kuznetsov, Tomsk (Sibirskiy fiziko-tehnicheskiy institut im Kuznetsova).

49. Vilnius State University (Vil'nyusskiy GU).

50. Institute of Semiconductor Physics, AN LitSSR, Vilnius (Institut fiziki poluprovodnikov AN LitSSR).

51. Kiev State University (Kiyevskiy GU).

59. Institute of Physics Research, AN ArmSSR (Institut fizicheskikh issledovaniy AN ArmSSR).

66. Institute of Solid State Physics, AN SSSR (Institut fiziki tverdogo tela AN SSSR).

67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).

71. Institute of Applied Mathematics, AN SSSR (Institut prikladnoy matematiki AN SSSR).

72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).

73. Institute of Theoretical Physics im Landau, AN SSSR (Institut teoreticheskoy fiziki im Landau AN SSSR).

74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).

75. Institute of Automation and Electronic Measurements, Siberian Branch AN SSSR (Institut avtomatiki i elektrometrii SOAN).

78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).

79. Institute of Nuclear Physics, Siberian Branch AN SSSR (Institut yadernoy fiziki SOAN).

84. Institute of Radiophysics and Electronics, AN UkrSSR (Institut radiofiziki i elektroniki AN UkrSSR).

85. Institute of Nuclear Physics, AN UzSSR (Institut yadernoy fiziki AN UzSSR).

94. Gor'kiy State University (Gor'kovskiy GU).

98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom GU).

99. Institute of Mechanics and Physics, Saratov (Institut mekhaniki i fiziki).

107. Khar'kov State Scientific Research Institute of Metrology (Khar'kovskiy gos NII metrologii).

109. Latvian State University (Latviyskiy GU).

110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).

114. L'vov State University (L'vovskiy GU).

118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tehnicheskiy institut).

120. Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography (Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii).

122. Scientific Research Institute of Physicochemistry im Karpov (NI fiziko-khimicheskiy institut im Karpova).

129. Siberian State Scientific Research Institute of Metrology (Sibirskiy gos NII metrologii).

133. Central Aerohydrodynamic Institute im Zhukovskiy (Tsentral'nyy aerogidrodinamicheskiy institut im Zhukovskogo).

136. Uzhgorod State University (Uzhgorodskiy GU).

141. All Union Scientific Research Institute of Optophysical Measurements (VNII optiko-fizicheskikh izmereniy).

150. Dnepropetrovsk State University (Dnepropetrovskiy GU).

152. Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov).

159. Institute of Thermophysics, Siberian Branch AN SSSR, Novosibirsk (Institut teplofiziki SOAN).

161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhnika, elektroniki i avtomatiki).

163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).

180. Institute of Heat and Mass Exchange, AN BSSR (Institut teplo- i massoobmena AN BSSR).

181. Institute of Nuclear Research, AN UkrSSR, Kiev (Institut yadernykh issledovaniy AN UkrSSR).

188. All Union Scientific Research Institute of Single Crystals, Scintillation Materials and Extra Pure Chemical Substances, Khar'kov (VNII monokristallov, stsintillyatsionnykh materialov i osobu chistykh khimicheskikh veshchestv).

193. Institute of Theoretical and Applied Mechanics, Siberian Branch AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).

197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).

201. Institute for Problems of Information Transmission, AN SSSR, Moscow (Institut problem peredachi informatsii AN SSSR).

202. Institute of Electronics, AN UzSSR, Tashkent (Institut elektroniki AN UzSSR).

206. Institute of Geology and Geophysics, Siberian Branch, AN SSSR, Novosibirsk (Institut geologii i geofiziki SOAN).

210. Institute of Physics, Siberian Branch AN SSSR (Institut fiziki SOAN).

214. Kazan' Pedagogical Institute (Kazanskiy pedagogicheskiy institut).

220. Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii).

231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).

247. Scientific Research Institute of Electrophysical Equipment im Yefremov, Leningrad (NII elektrofizicheskoy apparatury im Yefremova).

251. Tomsk Institute of Automatic Control Systems and Radioelectronics (Tomskiy institut avtomatizirovannykh sistem upravleniya i radioelektroniki).

252. Leningrad Institute of Nuclear Physics, AN SSSR (Leningradskiy institut yadernoy fiziki AN SSSR).

255. Tallinn Polytechnic Institute (Tallinskiy politekhnicheskiy institut).

277. Leningrad Institute of Aviation Instruments (Leningradskiy institut aviationsonnogo priborostroyeniya).

280. Moscow Scientific Research Institute of Eye Diseases im Gel'mgol'ts (Moskovskiy NII glasnykh bolezney im Gel'mgol'tsa).

287. Institute of Physical Chemistry, AN SSSR (Institut fizicheskoy khimii AN SSSR).

299. Institute of Electronics, AN BSSR (Institut elektroniki AN BSSR).

307. Institute of Thermophysics and Electrophysics, AN EstSSR (Institut termofiziki i elektrofiziki AN EstSSR).

321. Mogilev Branch of the Institute of Physics, AN BSSR (Mogilevskiy filial Instituta fiziki AN BSSR).

327. Novosibirsk Electrotechnical Institute (Novosibirskiy elektrotekhnicheskiy institut).

334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom GU).

381. Institute of Hygiene im Erisman (Institut gigiyeny im Erismana).

405. Institute of Hydromechanics, AN UkrSSR (Institut gidromekhaniki AN UkrSSR).

417. All Union Scientific Research Institute of Eye Diseases (VNII glaznykh bolezney).

421. Institute of Physics of Metals, Ural Scientific Center, AN SSSR, Sverdlovsk (Institut fiziki metallov Ural'skogo nauchnogo tsentra AN SSSR).

424. Voroshilovgrad Mechanical Engineering Institute (Voroshilovgradskiy mashinostroitel'nyy institut).

426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).

430. Minsk Radio Engineering Institute (Minskiy radiotekhnicheskiy institut).

448. Central Design Bureau with Trial Production, AN BSSR (Tsentral'noye konstruktorskoye byuro s optynym proizvodstvom AN BSSR).

450. Scientific Research Institute of Stable Isotopes (NII stabil'nykh izotopov).

458. Kuybyshev Pedagogical Institute (Kuybyshevskiy pedagogicheskiy institut).

464. Nizhniy Tagil State Pedagogical Institute (Nizhniy Tagil'skiy gos ped institut).

466. Institute of High-Current Electronics, Siberian Branch AN SSSR, Tomsk (Institut sil'notochnoy elektroniki SOAN).

485. Institute of Nuclear Research, AN SSSR, Moscow (Institut yadernykh issledovaniy AN SSSR).

494. Vladimir Polytechnic Institute (Vladimirskiy politekhnicheskiy institut).

510. Pacific Oceanographic Institute, Far East Scientific Center, AN SSSR (Tikhookeanskiy okeanologicheskiy institut Dal'nevostochnogo nauchnogo tsentra AN SSSR).

511. Institute of Applied Problems in Mechanics and Mathematics, AN UkrSSR, L'vov (Institut prikladnykh problem mehaniki i matematiki).

512. Institute of General and Inorganic Chemistry, AN UkrSSR, Kiev (Institut obshchey i neorganicheskoy khimii AN UkrSSR).

521. Scientific Research Institute for Physics of Condensed Media of Yerevan State University (NII fiziki kondensirovannykh sred Yerevanskogo GU).

530. Institute of Chemistry AN TadzhSSR (Institut khimii AN TadzhSSR).

538. Moscow Institute of the National Economy (Moskovskiy institut narodnogo khozyaystva).

560. Institute of High Energy Physics, Serpukhov (Institut fiziki vysokikh energiy).

571. Kiev Branch of the Odessa Electrotechnical Institute of Communications (Kiievskiy filial Odesskogo elektrotekhnicheskogo instituta svyazi).

579. Scientific Research Institute of High Voltages at Tomsk Polytechnic Institute (NII vysokikh napryazheniy pri Tomskom politekhnicheskem institute).

588. Kemerov Technological Institute of the Food Industry (Kemerovskiy tekhnologicheskiy institut pishchevoy promyshlennosti).

611. Khar'kov Medical Institute (Khar'kovskiy meditsinskiy institut).

612. Nikolayevsk Shipbuilding Institute (Nikolayevskiy korablestroitel'nyy institut).

629. Ufa Aviation Institute (Ufimskiy aviatzionnyy institut).

635. "Optoelectronika" Special Design Bureau of Kishinev State University (Spetsial'noye konstruktorskoye tekhnologicheskoye byuro "Optoelektronika" Kishinevskogo GU).

636. Moscow Regional Clinical Scientific Research Institute (Moskovskiy oblastnoy NI klinicheskiy institut).

637. Kiev Institute for Advanced Training of Doctors (Kiyevskiy institut usovershenstvovaniya vrachey).

638. Special Design and Technical Bureau with Trial Production of the Institute of Physics, AN BSSR (Spetsial'noye konstruktorskoye tekhnologicheskoye byuro s optynym proizvodstvom Instituta fiziki AN BSSR).

639. Institute of Astrophysics and Physics of the Atmosphere, AN EstSSR, Tallin (Institut astrofiziki i fiziki atmosfery AN EstSSR).

- 642. Institute of Geotechnical Mechanics, AN UkrSSR, Dnepropetrovsk  
(Institut geotekhnicheskoy mekhaniki AN UkrSSR).
- 643. Scientific Research Institute of X-Radiology and Oncology  
(NI rentgenoradiologicheskiy i onkologicheskiy institut).
- 644. Central Scientific Research Institute of Reflexotherapy  
(Tsentral'nyy NII refleksoterapii).
- 645. Novosibirsk Medical Institute (Novosibirskiy meditsinskiy institut).

VI. AUTHOR INDEX

A	B	C	D	E	F	G	H	I
AARIK YA A	3	ASINOVSKIY E I	14	BELYAYEV A K	18			
ABAKAROV D I	44	ASLANYAN L S	87	BELYAYEV M V	36			
ABAKUMOV B M	58	ASTAFUROV B G	51	BELYAYEVA T V	34			
ABALAKIN V K	51	ASTASHKINA YE V	51	BERCHENKO YE A	99			
ABRAHAM A	82	ATADZHANOV M R	2	BEREGULIN YE V	24			
ABRAMUCHKIN A I	25	ATAKHODERAYEV A K	71	BEREZHINSKIY L I	27			
ABRAMOVA R S	68	AUSLENDER A L	103	BEREZIN A B	78			
ACHASOV O V	18	AUSIN'SH M P	69	BEREZIN D G	59			
ADAMOVA YU A	63	AVANESOV A G	87, 94	BERG M E	66			
ADKHAMOV A A	107	AVDEYEVA V I	5, 87	BERGRER H	32			
ADUYEV B P	2	AVER'YANOV N YE	41	BERLYAND M YE	105			
ADZHALOV V I	68	AVER'YANOV YE M	12	BERNAN G P	36			
AFANAS'YEV A A	35, 36	AXINTE C V	46, 66	BERTEL' I M	13			
AGAPONOVA K A	49	AZIKOV B S	87	BERTSEV V V	34, 70			
AGAFON'TSEV V P	86	AZIMOV B S	36	BESPALOV V I	18			
AGEYEV V A	86	AZISOV S T	95	BETEROV I M	63			
AKHURIN G G	12			BEYSEMBAEVA KH B	1			
AKHMANOV A S	12			BIBIKOVA V V	12			
AKHMANOV S A	36, 42			BILALOV F S	92			
AKHREM A A	89	BABENKO N K	59	BLAGOVESHCHENSKIY V V	41			
AKIMOVA N A	46	BABENKO V V	73	BLANARU C	69			
AKINFIYEV N N	63	BABICHENKO S M	34	BLOKHIN A P	88			
AKRAMOVA D SH	63	BABONAS G A	48	BLOKHIN V A	73			
ALAVERDYAN S A	3	BABSON V	4	BOBRIK V I	29			
ALEKSANDROV B S	16	BACHMANN P	69	BOETTGER H	88			
ALEKSANDROV I N	98	BADZIAK J	24	BOGDANOV V L	88			
ALEKSANDROV J V	48	BAKANOV D G	16	BOGDANOVA V I	13			
ALEKSANDROV L N	106	BAKHIR L P	66	BOGEN L P	46			
ALEKSANDROV N A	49	BAKHRAKH V L	57	BOGOROLOV A S	78			
ALEKSANDROV O V	3	BAKHSRIYEV N G	41	BOGOUDOLV A M	52			
ALEKSANDROV YE B	86	BAKHVALOV N S	57	BOKOV N A	81			
ALEKSEYEV A V	51, 103	BAKRUNOV A O	78	BOLDUAN F	98			
ALEKSEYEV N YE	103	BALIN YU S	52	BOLESTA I M	91			
ALENTSEV B M	66	BALKANSKI M	98	BOLSUN A I	78			
ALEXANDRESCU R	66	BALKAREY YU I	37	BONCHREVA-MIADENOVA Z	84			
ALEYNIKOV V S	12, 95	BALMUKHANOV T S	46	BONDAR' YU F	21			
ALPEROV A N	47	BALMUSH N I	36	BONDARCHUK V N	8			
ALIMOV D T	63	BALOSHIN YU A	12	BONDARCHUK YE N	64			
AL'PEROVICH M A	41	BANIN YE S	83	BONDARENKO A I	74			
ALUM KH P	68	BAN'KO G P	26	BONDARENKO A V	95			
AMBRAZAYAVICHUS G A	49	BANNOV V YA	27	BONDARENKO YU A	95			
AMINEV A M	48	BARANCHIKOV V M	84	BONDARENKO YU F	95			
AMUSOV A A	57	BARANOV V M	4	BONDARUK V N	78			
ANANICH V G	96	BARBONIE T	22, 52, 78	BORISOV E V	48			
ANDREYEV A A	36	BARDYUKOV A M	66	BORISOV V I	71			
ANDREYEV A TS	48	BARILYAK I R	46	BORKINA G YU	48			
ANDREYEV A V	42	BARKOVA L A	8	BORODINA G G	95			
ANDREYEV N S	81	BARONOV G S	63, 87	BOROVKOV O V	25			
ANDREYEV V I	58	BARTA CH	88	BOROVSKIY A V	42			
ANDREYEVSKAYA T M	68	BARYSHNIKOV P F	18	BORZUMOV N G	66			
ANDRONOV G A	16	BASIIIEV T T	87	BORYKH A A	99			
ANDRUSHKO L M	48	BASKIN E M	26	BOYKO M YE	88			
ANISIMOV S I	97	BASOV N G	12, 14	BOYENKO I G	23			
ANKILOV A N	69	BATALINSKIY V I	59	BOYTSOV B S	63			
ANTONETS V A	69	BATOVRIN V K	1	BOYTSOV V F	21			
ANTONOV A S	51	BATYUKOV V G	24	BOSHEVOL'NYY S I	28			
ANTONOV V A	69	BAYKOVA N D	68	BRAGINSKAYA P I	79			
APANASEVICH P A	38, 36, 87	BASAROV YE N	12, 78	BRAYNIN YU I	23			
APEL P	51	BASYK A I	88	BRAYEV V V	17			
APUSTOL D	69	BASYL' O K	8	BRITOV A D	4, 63, 87			
ANAKELYAN S A	66	BASYLENKO V A	18	BRODIN M S	36			
ARIFZHANOV S B	38	BEDILOV M R	15, 100, 181	BRODOV M YE	24			
ARISTOV A V	7	BEGUNOV D N	183	BRUECKNER V	32			
ARMAND S A	51	BELAVIN V A	16	BRUK YU M	71			
ARSENIN V YA	24	BELENOV E M	43	BUMNOV M M	48			
ARTAMONOV A V	12	BELEVITNEV V R	88	BUCHIN A V	88			
ARTYUSHENKO V G	69	BELOGUROV A A	46	BUDRINA G V	59			
ARUTYUNYAN A G	41	BELOKRINITSKIY N S	48	BUPETOV I A	52			
				BURIM YE D	49			

BUKHENSKIY M F	43	CHURIKOV A A	79	D'YAKONOV A M	35
BUKIN G V	2	CHURSINOVA L V	8	D'YAKOV V A	68,97
BUKIN O A	52	CIGANY I	7	D'YAKOV YU YE	32
BULANIN M O	34	CIURA A I	69	DYMSHAKOV V A	95
BULGAKOV A G	89	COLACKI Z	3	DYMSHITS B N	16
BULYARSKIY S V	71			DYUBA N M	79
BUNKIN A F	87	D		DYUBKO S P	15
BUNKIN P V	42			DEHAGAROV B M	89,93
BURAKIN V N	100	DADASHEV R S	79	DEHIBLADEZ M I	5
BURAKOV V S	88,105	DAMIAN V	69	DEHIDSEHOYEV M S	36
BURDEVITSKIY A YE	66	DANICHKIN S A	52	DEHUGELI B P	73
BURDIN I YU	71	DANILEYKO N V	18	DEHUGURYAN L A	37
BURDONSKIY I N	95	DANILOV N S	71	DEYUBKO N YA	47
BUNITSKIY K S	38	DANILOVA V I	8,9		
BURLIY P V	25	DANILYCHEV V A	12,14	E	
BURMISTROV A V	96	DANISHEVSKIY A M	93		
BUNTSEV V A	78	DAN'SHCHIKOV YE V	95	EPENDIYEV T SH	8
BURYKIN S YE	71	DASHUK P N	22	EGANOV U	1
BUTENKO G G	92	DAVYDOV A M	61	ELENKRIG B B	58
BUTUSOV M M	68	DEGTYARENKO K M	8	EL'MANOVICH N N	97
BUY TKHI N'I	3	DELONE N B	63	ERDEVDI N M	23
BUYALO N N	26	DEMBOVETSKIY V V	64	ESIASHVILI Z G	5
BUYALO YE N	88	DEMBOVSKIY S A	35	ETINBERG M I	56
BUZDIN A A	52	DEMCHUK M I	41,53,93		
BUZHINSKIY O I	15,19	DEMENT'YEV D A	99	F	
BYAKOVA N D	58	DEMENT'YEV S YA	59		
BYKHOVSKAYA A YE	54	DEMIN A I	16,17	PARBSHTEYN I I	29
BYKOV V P	43,47	DEM'YANOV A V	14	PARCAS I	66
BYKOVSKIY N YE	34	DENISENKO V N	53	PATEYEV N V	63
BYKOVSKIY YU A	28,69,101	DENISOV L K	8	PAYNBERG B D	8,93
BYSTRITSKIY V M	19	DENISOVA I L	2	PEDOROV B P	59
BYTEVA I M	93	DENISYUK I YU	61	PEDOROV I V	60
C		DENISYUK YU N	61	PEDOROV M V	42
CATACU ST	69	DENKER B I	5,6,7,87	PEDOROV V A	84
CHAMOROVSKIY YU K	78	DERYUGIN I A	35	PEDOROV V B	52
CHAPLIK A V	86	DERZHIEV V I	42	PEDOROV V S	87
CHAPNIN V A	4	DEVDARIAN I Z	18	PEDOROV YU A	29
CHASHEY I V	53	DEVYATOV A N	61	PEDOROV YU K	6
CHAYKA M P	71	DIANOV YE M	48,69	PEDOROV YU V	62
CHAYKOVSKIY A P	53	DIDENKO N K	53	PEDOROVA O N	62
CHAYKOVSKIY V K	8	DIDYUKOV A I	17	PEDOSEYEV A I	16
CHEBOTAYEV V P	36	DIETL M	3	PEDOSEYEV V P	78
CHEBURKIN N V	13	DMITRIYeva T P	97	PEDOTOV A A	100
CREKALIN S V	64	DMITROTSKA I I	52	PEDYUSHIN B T	99
CHELYAYEV A P	78	DOLGIKH G I	72,74	PEKESHRGAZI I V	38
CHERNYY A B	46	DOLGINOV L M	3	PEL'D S YA	48
CHEPILKO A G	66	DOLGOLENKO A P	98	PELINSKIY G S	98
CHERDYNTSEVA G A	82	DOLGOPOLOV YU V	21	PERBER R S	87,94
CHEREMIN G S	107	DONEVA T A	97	FIDEL'SKAYA R P	13
CHERKASOV YE V	98	DONIN V I	19	FILIPPOV V V	44
CHERNENKO V P	19	DOROKHOV A R	69	FILIPPOV YU F	58
CHERNOBROD B M	85	DORONIN V G	16,22	FILIPPOVA S M	47
CHERNYAKOV A L	57	DOROSHENKO V N	13,17	FILONENKO A D	56
CHERNYAVSKIY A P	41,93	DOTSENKO A V	22	FINKEL' A G	57
CHERNYKH V A	38,58	DOUBRAVA P	82	FIRSOV I G	77
CHERTKOV A A	6	DOVEYSH L YE	11	FISHERMAN I S	102
CHIKH P I	46	DOVGIY B P	38	POFANOV YE A	11
CHILINGARYAN YU S	34,39	DRABOVICH K N	37	POK M V	89
CHINNOV V P	18	DRAGANESCU V	66	POKIN A V	107
CHIRKIN A S	44,56	DREYDEN G V	56	POLIN K G	85
CHIRKOV L YE	76	DROSHININA L V	38	POMICHEV A A	22
CHIRKOV V A	101	DUBOVICH M V	3	POMICHEV V I	44
CHIRVONYY V S	89	DUBOVETS V G	57	POMICHEV V P	71
CHISTYAKOVA L K	56	DUBOVIK M V	19	POMICHEV V V	89
CHUBAROV S I	84	DUBOVY A P	72	POMIN N A	18
CHUMACHEKOVA M M	2	DUL'NEV G N	22	POMIN V K	52
CHUPRYNA S A	87	DURINYAN R	46	POMIN V V	12
CHURAKOV V V	13	DVORECHENSKIY A V	98	PONOV S D	71
		DYADYUSHKIN P I	34	POREK N N	68
		DYAKIN V V	46	PORTYGIN A A	82

FOYSEL' A V	48	GORINA YU I	3	IL'IN P P	25
FREYER R	63	GORODETSKIY YE YE	56	IL'IN YU B	44
FRIDENTAL YA K	3	GOROKHOV YU G	78	IL'INOV A N	82
FRIDMAN A A	26	GORSHKOV V G	44	ILISAVSKIY YU V	35
FROMZEL' V A	6	GORSKA N	3	ILYUKHIN A A	181
FRUNAR M	82	GORYUROVA T D	26	IMANOV E S	37
FURSENKO A A	81	GOTTSCHALK M	3	INFINOVSKAYA A A	16
G		GRANDBERG I I	8	IONESCU A	69
GADZHIYEV F N		GRASYUK A I	33	IPATOV A L	21
GAGARINA V A	89	GRATSIANOV K V	5	IRKHA V I	4
GAJ M	61	GRIGORYAN M M	67	ISAKOV V L	47
GAL'BURT V A	97	GRIGOR'YEV N N	89	ITKIN YU A	72
GALIYEV A L	96	GRIMM E	27	IVAKIN YE V	24, 37
GALKIN A L	24	GRINCHENKO B I	18	IVANOV A A	73
GALKIN G N	85	GRINTSEVICH E M	9	IVANOV A I	97
GALUSHKIN N G	13	GRISHANOV V N	59	IVANOV V P	73
GAMAL K (SEE HAMAL K)		GRISHINA N P	75	IVANOV V S	4
GANAPOL'SKIY YE M	35	GROMENKO V M	56	IVASEKIN P I	24
GANEYEV R A	38	GROMOV A K	6	IVASEKIN YU A	92
GAPONTEEV V P	6, 48, 183	GROSU N D	26	IZRAYELYAN V G	76
GAREVSKIY V N	72	GRUSHETSKIY K M	89	IZYNEYEV A A	48
GARIBYAN O V	37	GRUSHKOVSKIY V B	64	J	
GASE R	67	GRUSHKO N S	71	JAHN U	98
GAUBAS E	68	GRUSHNIKOV O P	187	JANUSZ CZ	1
GAVRIKOV V K	53	GRUZINSKIY V V	8, 9	JEDRZEJCZAK A	3
GAVRILOV N I	24	GUBA B S	5	JELINKOVA H	53
GAVRILOV V V	95	GUBAREV A V	17	JODE J J	98
GAYKO O L	89	GUBIN N A	29	K	
GAYSLER V A	89	GUBIN V P	12	KABANOV M V	51
GEILER H D	98	GUDELEV V G	18	KACHANOV A V	95
GELLER V M	72	GUDYMENKO L P	2, 82	KACHINSKIY A V	38
GEORGIEVA N I	97	GULAMOV A A	39	KACHURA T F	65
GERASIMOV G A	12	GULE YE G	82	KAKICHASHVILI SH D	73
GERASIMOVA S A	59	GULYAYEV YU V	58	KALANDADZE T M	86
GERSHENSON YE M	4	GUNICHEV A P	93	KALENKOV S G	15
GHILAC C P	46	GUNARI M L	68	KALINUSHKIN V P	27
GIK L D	184	GURIMOVICH G P	89, 93	KALOSHA V P	49
GINEBURG G M	69	GURKO A P	65	KALYGINA V M	4
GINZBURG V L	43	GUN'YANOV A N	48	KALYUZHENAYA G A	3
GINZBURG V M	69, 72	GUN'YEV V I	29	KAMENOGRADSKIY N YE	54
GITLIN YE M	53	GUNADYAN G G	46	KAMENSKAYA I V	87
GLADUSH G G	96	GUSEV G P	97	KANASHOV A A	38
GLAZOV G N	51	GUSEV O B	28	KAPRALOV V P	67
GLINCHUK K D	82	GUSEV V A	28	KARAMAN M I	83
GLOTOV YE P	12, 14	GUSOVSKIY D D	48	KARANIN YU N	38
GLUSHCHENKO A A	38	GUTU I	66	KARAVAYEV S M	63, 87
GLUSHKOV M V	92	GYULAMIRYAN A L	33	KARAYEMYAKI YE	93
GOCHELASHVILI K S	53	GYUZALYAN R N	66	KARAYEV A L	99
GODOVIKOV A A	93			KARCHEVSKIY A I	63, 87
GOEDE O	82	H		KARELOV A A	92
GOETZ G	98			KAREV YU I	33
GOGLIDZE T I	71	HABBERT N	92	KARINUVA P P	26
GOLETSKAYA A D	29	HANAL K	53	KARLASH V P	81
GOLIK L L	37	HERCHENROEDER G	58	KARLASHOV A V	18
GOLOMSHTOK V M	188	HINS N	63	KARLOV N V	73
GOLOVIZNIN V P	72	HOPF P	61	KARNAUKHOV V N	62
GOLUBEV A N	72	HOPFMANN K	92	KARPACHEV S V	39
GOLUBNICHII P I	34, 56	HORAK M	184	KARPENKO S G	33
GOMOZOV V I	28	HORVATH I GY	9	KARPOV V YE	73, 77
GONCHAROVA L S	28	HUEBNER E	51	KARTASHEVA L I	7
GONCHUKOV S A	18, 72	I		KASATKIN V A	94
GONIK A YE	79			KASCHAEVA G A	73
GORBACHEVA V V	76			KASHEBA V A	46
GORBAN' I S	64	IBAYEV YU K	68	KASUNOVA R D	16, 72
GORBUNOV L N	181	IBRAGIMOV E P	38	KATSAUROV L N	83
GORBUNOVA T A	34	IKOMIC I	9		
GORDIYENKO V M	31	IL'CHISHIN I P	9		
GORELOV A V	72	IL'ICHEV N N	6, 7		

KATSEV A	62	KOKURIN YU L	51	KOSOVSKIY L A	66
KATSEVA I R	51	KOLESOV V L	74	KOSTIN N A	74
KAUFMAN S A	73	KOLESHUK YE S	59	KOSTRO N YA	75
KAUL' B V	52	KOLOBASHKIN V N	74	KOSTRITSKIY S N	98
KAVEYEEVA Z N	38	KOLOBKOV N S	26	KOTLIKOV YE N	71
KAZAK V L	88	KOLODZIEJCZAK J	44	KOTOV V N	48
KAZANSKIY P G	58	KOLONIYETS A D	59	KOTYUE A F	66,67
KAZHIDUB A V	17	KOLOMIYSKIX A N	95	KOVALENKO V A	2
KERTES I (SEE KERTESZ I)		KOLOSHNIKOV G V	181	KOVALENKO V P	59,88
KERTESZ I	7	KOLOVSKIY A R	36	KOVAL'EV YU I	48
KESAMANLY F P	94	KOLTUN V L	11	KOVAL'CHUK YU V	68
KESSEL' A R	35,45	KOMAROV S A	98	KOVAL'SKIY A O	28
KETKOVICH A A	76	KOMAROV V N	13	KOVAL'SKIY N G	95
KHABIBULLAYEV P K	63,188	KOMAROVA A A	46	KOVRIGIN A I	36,37
		KOMISSAROV S G	86	KOVTUN V P	19
KHAKIMOV F KH	187	KOMISSARUK V A	74	KOWALCZYK L	3
KHALLER YU	4	KOMLEV A A	69	KOZICH V P	87
KHANKOV S I	22	KONDILENKO I I	98	KOZLOV G I	17
KHAPALYUK A P	49	KONDRASTOV V N	95	KOZLOV L P	73
KHARCHENKO V A	81	KONDRAZENKO A N	43	KOZLOV N V	52
KRASANOV D K	98	KONDRAZ'YEV A I	74	KOZLOV O I	81
KRAYBULLIN I G	98	KONDRAZ'YEV YE L	67	KOZLOV V V	75
KHAYKIN N SH	66,67	KONDRAZOV O I	89	KOZLOV YU G	78
KHAYMINOV V N	53	KONEPAL Z	8	KOSYUKOV V N	6
KHAZANOV A B	25	KONEV YU B	14	KRAMIDA A YE	181
KREYFETS L M	85	KONJEVIC N	9	KRAPOSHIN V S	95
KHILIMOVA N S	48	KONONENKO V G	99	KRASHENINNIKOV YE G	28
KHINRIKUS KH V	58	KONONENKO V K	4	KRASIK YA YE	19
KHODAKOV K A	85	KONONOV A A	68	KRASILOV YU I	88
KHODAN I V	73	KONONOV V A	78,188	KRASIN'KOVA N V	68
KHODINSKIY A N	74	KONOVO V I	99	KRASNIKOV V V	98
KHOLBAYEV A	188	KONOYRO A I	23	KRASNOPEVTSEV V V	83
KHOLMOGOROV V YE	41	KONSTANTINOV I YE	95	KRAULIN' E K	186
KHOLODNYKH A I	32,36,97	KONSTANTINOV V B	23	KRAVCHENKO A P	26,89
KHOMCHENKO V S	2	KONSTANTINOV V N	44	KRAVCHENKO V B	6,183
KHOMENKO A V	68	KONSTROFFER L	27	KRAVCHENKO V I	7
KHOMENKO V YE	49	KOPETSKIY CH V	95	KRAVCHENKO V V	98
KHOMICH V I	188	KOPRANENKOV V N	28	KRAVETS M V	11
KHRAMOV B V	59	KOPVILLEM U KH	44,74,83	KRAVTSOV N V	33
KHRAMOV G A	14		103,186	KREMENCHUGSKIY L S	27,66
KHVALOVSKIY V V	62	KOPYLOV S M	31	KREVCHIK V D	37
KIJEK A	61	KOPYLOV V I	54	KRIKUNOVA E M	54
KILPIO A V	9	KOPYLOV V N	98	KRINITSYN YU M	74
KIPEN' A A	98	KOPYLOV V V	52	KRIVONOSOV V N	11
KIREYEV V I	17	KOPYLOVA T N	8,9	KRIVOSHCHEROV G V	11
KIRILLIN A V	85	KORABLIN V N	59	KRIVOV M A	87
KIR'YANOV YU F	38	KOREN'Y V G	53	KRIVOV YU N	88
KIRYUSHIN S I	183	KOREN'KOV V I	69	KRUGLENKO V P	9
KISELEV A K	48	KORETSKVIY YA P	16	KRUGLEVSKIY V A	18
KISELEVA R V	3	KORMER S B	21	KRUKOWSKA-FULDE B	31
KIYACHENKO YU P	56	KORMIN A S	69	KRUMIN' A E	68
KLASSEN N V	94	KORNATYEV N A	52	KRUPINA V L	49
KLEINERT P	88	KORNILOV A V	99	KRUTYAKOVA V P	83
KLEOPOV A G	9	KORNIYENKO L S	16,33	KRYUCHKOV S I	13
KLETSKIN YA G	95	KOROBKIN V V	24,42,57	KRYUKOV P G	46
KLEYNENKOVA O S	83	KOROCHKIN L S	74	KRYUKOVA I V	2
KLIKORKA J	82	KOROLEVA YE N	26	KRYZHANOVSKIY V I	6
KLITSOVA ZH I	1	KOROL'KOV A N	16	KUBBCEK V	53
KLOCHKOV V P	88	KOROLYUK A P	35	KUBICEK Z	49
KLUDZIN V V	26,28	KOROTEEV N I	89,98	KUBICHEK V (SEE KUBBCEK V)	
KLYAVIN'SH YA P	64	KOROTKIN I R	53	KUCHEROV I YA	25
KLYUKIN L M	26,59	KOROTKOV P A	98	KUDAYEVA L M	46
KNYAZ'KOV A V	68	KORSHUNOV O V	18	KUDLENKO V G	56
KNYUPPER A P	73	KORT S I	88	KUDRYAVTSEV N N	13,17
KOBELEV L YA	39	KORYAKOVSKIY A S	74	KUDRYAVTSEV S D	54
KOBELEV V V	52	KOSCIELENSKI R	74	KUDRYAVTSEV V G	38
KOCHARYAN L N	37	KOSHEVOY V V	62	KUDRYAVTSEV YE N	16,17
KOCHERASOV G G	38	KOSHEKIN A V	99	KUKHARENKO A T	17
KOCHETOV I V	14	KOSHEKIN L I	59,188	KUKETA A V	67
KOKUNOVA V N	88	KOSICHKIN YU V	92	KUKHTAREV N V	38,68

KUKHTEVICH V I	66	LEVSHIN L V	48,41	MALOV A N	19
KULAKOV S L	22	LESHAVA B S	5	MALOV L R	28
KULAKOV S V	28,163	LIBENSON M N	98	MALTGIN A A	27
KULESH V P	71	LIBERMAN A A	68	MALYUTENKO V K	27
KULEVSKIY L A	32	LIKHANSKIY V V	83	MALYUTIN A A	6,7,9
KULIKOV S M	21	LILENKO YU V	86	MAMAYEV A V	33
KULIKOV S YU	63,87	LILIYENBLYUM V	73	MAMEDLI L D	12
KULISH N R	91	LIMARENKO L N	86	MAMEDOV S B	91
KUPRIYANOV S YE	13,64	LIMOV M P	88	MAMENKOV A A	84
KURAMATOV D	188	LINNIK L F	83,84	MAMISIRIN V G	57
KURBASOV V V	54	LINNIK L G	83,84	MANITA O F	84
KURBASOVA G S	54	LIPOVSKIY A A	49	MANSPEL'D A D	76
KURBATOV A L	4	LIPOVSKIY I M	57	MANZON B N	161
KURBATOV L N	83,87	LIPSKIY V V	11	MARAKHONOV V I	68
KURBATOV P F	11	LIPTUGA A I	27	MARCHENKO S N	68
KURNOSOV A K	14	LISENKO B S	26	MARCHENKO V M	74
KUTS P S	59	LISITSA M P	2,38,82,91	MARCHEVSKIY P N	33
KUTSEMOGIY K P	69	LISITSA V S	18	MARICHEV V I	52
KUUSK A E	168	LITVINCHUK A P	94	MARIN T	66
KUZICHEV V I	183	LITVINENKO A S	62	MARKILOV A A	69
KUZIKOVSKIY A V	56	LITVINENKO A YA	7	MARCOV V N	36
KUZIN YE A	33	LOBANOV B D	75	MARCOV YU P	88
KUZ'MINA N V	34	LOGUNOV O A	9	MARKUS P A	54
KUZNETSOV A L	8	LOGVINOV V I	84	MARONCHUK YU YE	26
KUZNETSOV D YU	57	LOMONOSOV V V	86	MARTI L	76
KUZNETSOV I S	54	LONCAREVIC B	9	MARTINES KH	91
KUZNETSOV N A	54	LOPATIN A I	78	MARTYNOVA S M	38
KUZNETSOV V A	85	LOPATIN V V	19	MARUNKOV A G	32
KUZNETSOV V I	36,37	LOPUŠAN I V	46	MASHOVETS T V	98
KUZNETSOV V L	42	LOSEV L L	33	MASLOV V V	76
KUZNETSOV V P	53	LOŠHKAREVA N N	93	MASYCHEV V I	12,14
KUZNETSOV V S	13	LOYKO M M	53	MATROSOV V N	2
KUZNETSOV-	88	LUCHINSKIY G V	97	MATSKO M G	36,92
PUSHCHINSKIY L A	57	LUGOVY V A	74	MATVEYEV D T	55
KUZNETSOVA T I	87	LUGOVSKOY V B	95	MATYTSIN S M	6
KVACH V V	91	LUKAT K	82	MATYUSHKOV V YE	96
KWIETNIAK M	91	LUKIN A V	75	MAYER G V	8
L		LUKIN M I	53	MAYER V G	9
LABARTKAVA A N	73	LUK'YANCHUK B S	73	MASAYEV I V	66
LABUNTSEV A S	83	LUNTER S G	6	MASING M A	162
LAGODA V B	161	LUTOSHIN V I	65	MARENICHENKO A P	91
LAMEKHOV E G	28	L'VOV O I	161	Mazor A KH A	95
LANGER J	31	LYAKISHEV V A	96	MCHEDLOV-PETROSYAN N O	41
LANGER T	31	LYASHENKO YE I	108	MEDVEDEVA V K	63
LANTSOV A M	8	LYSIKOV YU I	34	MEDYANTSEVA L L	76
LAPIDES A A	49	LYSKOVICH A B	91	MEL'NIKOV L A	12
LARIN S I	187	LYUBIN V M	84	MEL'NIKOV S P	11
LARIONTSEV YE G	22	LYUK P A	3	MENDE N R	74,81
LARKIN A I	69			MERTEN L	33
LAVRENT'YEV K A	79	MAGDICH L N		MERSILYAKOV A V	63,87
LAYKHO R	93	MAK A A		MERSILYAKOV N S	62
LAZNEVA E F	98	MAKAROV A G	75	MEZEN V S	8
LEBEDEV F V	17,95	MAKAROV S YA	6	MEHERITSKIY A V	83
LEBEDEV S A	28	MAKARSKAYA N V	84	MIKHAYLOV A I	44
LEBLE S B	52,83	MAKEYEV V A	88	MIKHAYLOV A S	2
LEKHTSBIER YE N	72,75	MAKARSKAYA V I	47	MIKHAYLOV N D	91
LEONOV V V	76	MAKOVSKAYA Z G	68	MIKHAYLOV V A	34
LEONOV YE I	46	MAKRENSKO S N	49	MIKHAYLOV V P	41,93
LEONOV YU S	12	MAKSAKOV A A	35	MIKHAYLOVA G N	84
LEONT'YEV S A	81,96	MAKSIMOV G M	40	MIKHAYLOVA T P	29
LEONT'YEV V G	11	MAKSIMOVA B V	64	MIKHAYEVA L I	93
LEPATINSKAYA YE P	86	MAKSIMOVA G V	73	MIKHNOV S A	78,74,166
LESHENYUK N S	89	MAKSIMOVA L I	75	MILER M	23
LETOKHOV V S	46,64,86	MAKSIMOVA N T	5,6,87	MILINCHUK V K	93
LEVASHENKO G I	66	MALAMED YE R	46	MIL'VIDSKIY M G	3
LEVCHENKO YE B	57	MALEVICH I A	75	MILYUTIN YE R	55
LEVIT B I	4	MALININ B G	88	MININ S N	17
LEVOLA T	93	MAL'KOV V V	84	MININSON YU N	91
			162	MINGGIN V G	86
				MIRAKYAN N N	48

MIROMOV A N	6	MIKLAS A	1	PANCHENKO V YA	77
MIROMOV S G	65	NIKOGOSYAN A S	67	PANGELOVA N	62
MISAKOV P YA	9	NIKOGOSYAN D N	46	PANKRATOV A V	63
MISCHKE W	91	NIKOLAYENKO A N	11,19	PANOV S V	77
MISHCHENKO V P	32	NIKOLAYEV V D	38	PAPAKIN V F	14
MISHIN A V	49	NIKOLAYEVA L S	59	PAPERNOV S M	65
MITEV E	85	NIKOLOVA L	66	PARKHOMENKO N V	45
MITEVA M	85	NIKOLOVA L P	29	PARSHIN D YA	88
MITKOVA M I	84	NITOIU A	69	PARYGIN V N	29
MKHEIDZE G P	21	NOLLE P N	25	PASHCHENKO V Z	47
MKHITAR'YAN L S	95	NOSALE O YU	39	PASHININ P P	6,7
MOGIL'NAYA T V	46	NOSENKO V YE	40	PASEKOVICH V YA	85
MOLODTSOVA YE N	46	NOSOV YU R	106	PASHUK I P	92
MONTANARI S G	81	NOVGORODOV A N	14	PASMANIK G A	57
MOROZOV S V	88	NOVIKOV M P	76	PATALAKHA N S	8
MOSKALEV A N	44	NOVIKOV S S	13,17	PATIN' O A	76
MOSKALEV V A	2	NOVIKOV V D	42	PAVLOV A N	74,77
MOTKIN V S	53	NOVIKOV V T	29	PAVLOVA Z G	68
MOVSEV V G	64	NOVOKRESHCHENOV V K	1	PAVLOVICH V N	98
MOZHERENKOV V P	46	NURGALIYEV K	83	PECHERITSYN I N	91
MSHVELIDZE G G	5	NURTDINOV N R	91	PECHERSKIY YU YA	31
MUELLER R	82	NUSINOVICH G S	43	PEGOVA T N	87
MUKHTAROV R I	28	O		PEKA G P	88
MULAK G	62			PENIN A N	27
MUNIR M	91			PEREDNYA A V	49
MUNTYAN A P	36	OBLIZIN A N	101	PEREGUDOV G V	101
MURINA T A	22	OBUKHOVSKIY V V	38	PEREKALINA Z B	7
MURINA T M	27	OCHKIN V N	13	PERGAMENT N I	95
MURUGOV V M	21	ODINTSOV A I	16	PERINA J	38,45
MUSHINSKIY V P	83,104	ODINTSOV V I	34	PEROV A A	64
MUSIN V M	35	ODULOV S G	37	PERVEZENTSEV N I	106
MUSIYENKO T I	97	OGORODNIKOV B K	84	PESETSKIY V A	71
MUSTAPIN T N	98	OGURTSOVA L A	64	PETRENKO R A	5
MYAGKOV S A	32	OKSHAN YA A	98	PETROSYAN K B	41
MYSHALOV P I	8,9	OLEYNIK V P	44	PETROV A K	79
N		OLTEANU D N	46	PETROV K I	89,96
NABERUKHIN YU I	94	OREKHOVA V P	2	PETROV M L	15
NABOYKIN YU V	64	ORLOV A A	71	PETROV M P	59,68
NADOL'SKIY YE YA	11	ORLOV A N	84	PETROV R P	84
NAGAYEV A I	29	ORLOV L N	28,89	PETROV YU N	84
NAGIBINA I M	23	ORLOV R YU	89	PETROVA O A	105
NAGORNYY V E	46	ORLOVA N D	92	PETROVICH I P	24
NAGORSKIY G A	65	ORLOVICH V A	87	PETROVSKIY G T	49,97
NAKHUTIN I YE	74	OSBEDCHIK YU S	31	PETRU F	25
NALIMOV I P	62	OSIKO V V	5,6,7,87	PETRUKHIN A I	96
NARUSBEK E A	25	OSIPOV G I	47	PETRUSHENKO A P	70
NASYROV U	38	OSIPOV M N	76	PETRUTA I D	49,56
NATAROVSKIY S N	72	OSIPOV YU V	88	PETRYAKOV V A	88
NAUMKIN N I	33	OSIPUVA L P	92	PETUKHOV V O	13
NECHAYEV S V	9	OSIP'YAN YU A	94	PEVGOV V G	14
NECHAYEV YU S	73	OSOVITSKIY A N	78	PEVNYY S N	21
NECSOIU T	22,52,76	OSTAPCHENKO YE P	11	PIDSIRAYLO N S	92
NEDAVNIY A P	18	OSTROVSKAYA G V	68	PIKAREVSKIY A A	77
NEGRIY V D	94	OSTROVSKIY I V	25	PIKANNIKOV V P	28
NEKRASHEVICH YA I	89	OSTROVSKIY YU I	56,76	PIKAYEV A K	7
NEMCHENOK A S	73,77	OVCHINNIKOV A A	21	PILIPETSKIY N P	33
NEMENUSHCHIY V N	37	OVCHINNIKOV A V	89	PILIPOVICH V A	23
NEPORENT B S	8,93	OVCHINNIKOV I M	83	PIMENOV YU D	61
NERSESOV E A	43	OVILKO O G	24	PINAYEVA N M	39
NESRULLAYEV A N	59,75	P	76	PINCHUK S D	53
NESTEROV P K	31			PINCHUKOV V I	17
NEUSTRUYEV V B	48	PACHUTA S		PIPCHENKO V P	22
NEVDAKH V V	89	PAGUTA N T	74	PIRAGS I YA	87,94
NIKIPOROV YU N	99	PAK P YE	76	PIROGOV YU A	24
NIKITENKO V A	91	PAKHALOV V B	11	PIRUNOV S S	5
NIKITIN P I	99	PALTARAK N M	34	PIS'MENNYY S V	16
NIKITIN S YU	32	PANASYUK L M	41	PIS'MENNYY V D	67
NIKITIN V V	10,28	PANCHENKO V P	71	PITERSKAYA I V	41
			17	PIVOVAROV N N	46
				PIVOVAROVA L N	100

PIVTSOV V S	85	PUGACHEV G S	81,96	RYKHOLOVA L V	52
PLATONENKO V T	36	PUSHKAR' N S	72	RYLINA L V	97
PLATONOVA L A	92	PUSTOVALOV T N	27	RYL'KOV V V	7
PLAVSKIY A I	88	PUSTYL'NIKOV L N	81	RYMOV A A	29
PLEKHOTKINA G L	16	PUEYREV N N	104	RYNEVICH N P	58
PLESHANOV P G	69	PYATIN N N	47	RYVKEIN B S	4
PLESHANOV YU YE	96	PYATOSIN V YE	65	RYZHIKOV B D	48,41
PLESHIVTSEV V S	26	PYLEV V A	73	RYZHOV V V	18
PLOTKIN N YE	181,182	PYSHKIN O N	64		
PLOTNICHENKO V G	14,77			S	
PODUSHENSKIY I V	11	R			
POGORELOV V YE	92			SAFONOV V P	85
POGOSSYAN P S	67	RAAB S	92	SAIDOV R	1
POKAZAN'YEVA G K	93	RABA O B	5	SAKAYEVA L A	29
POKHRYARYAN K N	41	RABINOVICH E N	12	SALAKHOV M KH	182
POKORNÝAKHO N G	79	RAFIKOV R A	75	SALDIN YE L	43
POLCHKOVA N D	4	RAGOZIN D S	18	SALIMOV O N	95
POLESHCHUK A G	24	RAGOZIN YE N	181,182	SALIVON G I	92
POLISHCHUK YU M	49	RAGUL'SKIY V V	39	SALOKHIDDINOV K I	93
POLIVANOV YU N	92	RAKHIMOV A T	67	SANARTSEV V V	38,48
POLIVANOV YU V	97	RAKHEVALOV V V	58	SANUKHVALOV A A	93
POLONIN A R	73,77	RAMMO I	4	SANUKHVALOV I V	52
POLUERKOV P P	74	RAUTIAN S G	19,85	SAMURUKOV B YE	94
POLUKHIN A T	67	RAYSER YU P	31	SANSON B A	36
POLYAKOV G A	12	RED'KO V P	23	SANIN A G	76
POLYAKOV G I	45	REDKORECHEV V I	38	SARANDAYEV YE V	182
POLYAKOV V I	23	REMIGAYLO YU L	2	SASHINA L A	75
POLYAKOV YU A	35	REMIZOV A B	92	SAVANUVICH L R	97
POLYANSKIY V K	58	RENNEV V B	13	SAVIN A A	21
PONATH H E	39	RENDEL' YU S	19	SAYAKHOV R SH	92
PONOMARENKO A G	188	RESHETSKIY V I	55	SAYENKO V B	67
PONOSOV YU S	93	REVA N G	48,41	SAYKIA P	182
POPADINETS YU YU	23	REZA A A	48	SAYKIN A S	68
POPELA D B	77	RISTICI M	69	SAZHINA N N	12
POPESCU I	65	RODIONOV V YE	82	SAZONOV V N	32
POPESCU I I	65	ROKAKH A G	85	SCHURICH J	63
POPLAVSKIY A A	97	ROMANCHUK T I	66	SCHROEDER B	32
POPOLITOV V I	91	ROMANOV G S	186	SEDNALIS U YA	6
POPOV A I	3,74	ROMANOV YU F	23	SEDOV A N	79
POPOV I A	34	ROMANYUK N S	78	SEDOV B M	5
POPOV L N	66	ROMASHKOV A P	67	SEPEROV A S	84
POPOVA N R	62	ROY N A	64	SELEZNEVA I K	17
POSPELOVA L A	88	ROZANOV N N	22,34	SEMINOV A A	98
POTAPOV V T	58	ROZENSTEYN A I	77	SEMINOV A N	28
POVSTYANOY N V	9	ROZENSTEINSKIY V N	25	SEMINOV A S	43,47
POYZNER B N	66	RUBANOV A S	24,37	SEMINOV A YE	98
POSDNYAKOV A YE	29	RUBENCHIK A N	38	SEMINOV E G	72
POSEHLA YU K	5	RUBESHNYY YU G	74	SEMINOV G B	78
PRANTS S V	74	RUBIN L B	47	SEMIN P S	182
PRAVILOV A M	21	RUBININA N N	97	SENGO I A	81
PREDA A	65	RUBINOV A N	8,94	SENYACKIN B YE	65
PREOBRAZHENSKIY N A	63	RUBINSTEYN V N	67	SENASHENKO N V	26,88
PREOBRAZHENSKIY N G	182	RUBTSOVA N N	79	SENATSKIY YU V	34
PRESLENKOV L N	26	RUDLEV S A	16	SENDER V R	7
PRISNIKAROV YU P	72	RUDINA O G	97	SEMULEN D B	48
PRILEZHAYEV D S	5	RUDNEVSKIY N N	75	SENYUSHKIN G YU	41
PRISCHEPOV A S	7	RUDNITSKIY YU P	103	SERDYUCHENKO YU N	9
PRISHIVALKO A P	51,55	RUDMAN G I	26,58	SEREBRYAKOV V A	6,58
PRIVALOV V YE	11,67	RULEA A	63	SERGIN A N	13
PROK A	77	RUPKUS YA E	65	SERGIYENKO A V	27
PROKHOLOV A N	16,24,27,28	RUSAHOV V D	28	SEROV R V	24,57
PROKHOLOVA S D	38,47,52,57,99	RYABTESEV G I	4	SEVAST'YANOV B K	2
PROKOP'YEVA S P	93	RYABUKINA G N	71	SEVERNYY S A	53
PROTSENKO YE D	2	RYADOV A V	21	SHABANOV V P	87
PROTSENKO YE D	18,72	RYASANOV A V	95	SHARAYEV S I	93
PROTSKOV S N	3	RYASANOV N I	38	SHADRIN V S	184
PROTSKOV YE G	99	RYASANTSEVA I L	88	SHAGUNIN L V	97
PRYAKHINA T A	48	RYBAK I YA	38	SHAKHLAY I P	24
PRYALKIN V I	32	RYBAKOV V A	96	SHAKHURATOV R N	49
PTASHCHENKO A A	4	RYKHOLOV A P	23	SHALAYEV V K	9

SHALYGIN V A	29	SINEL'NIKOV V N	72	STARCEVA YE YE	85
SHANDAROV V N	35	SINYI I G	93	STARIK P N	4
SHAPIRO B I	93	SINYAKOV A A	11	STARIKOV S N	69
SHAPIRO D A	19,28	SINYAYEV V A	73,77	STAROSTENKO B V	78
SHARAFUTDINOV R G	14	SIPYLO I P	95	STAROSTIN N I	12
SHARAKHOVSKIY L I	74	SIVACHENKO S D	63,87	STAKTSEV A V	9
SEARAPOV N I	55	SIZOV P P	13	STASHEKOVICH A A	29
SHARKOV V F	16	SIZOVA I M	77	STEGNAR R	91
SHARLANDZHIEV P	68,62,85	SKACHKOV A N	63	STEPANOV A I	5
SHARLAY S F	58	SKAKOV YU A	95,96	STEPANOV A V	39
SHASHKOV A A	54	SKATSKAYA G R	46	STEPANOV B N	4,26,58,69
SHASTIN V N	15	SKIN' G YA	85		72,75,106
SHATILOV A V	97	SKOPIN I A	3	STEPANOV R S	107
SHAURO G A	79	SKOROBOGATOV B S	1	STEPANOV V A	58
SHCHEKOTUROV L V	29	SKRDA A S	64	STOYANOVSKIY O I	77
SHCHEPINA L I	75	SKROTSKIY G V	78	STOYLOV YU YU	9
SHCHEPKINA YE D	48	SKRYSHEVSKIY V A	85	STOYUKHIN S G	91
SHCHERBAKOV I A	5	SKVORTSOV L A	71	STPANOV A N	64
SHCHERBAKOV YE A	28	SKVORTSOV M N	36	STRIZHEVSKIY V L	38,33
SHCHERBINA YU I	63	SKVORTSOV YU S	88	STRUKOV B V	28
SHCHERBITSKAYA L L	47	SLEPCHENKO G N	37	STUDENOV V I	41
SHCHERBOV V A	31	SLESAREVA L V	68	STUKALOV V I	27
SHCHUKIN I V	78	SLYUSAREV S G	21	STUKANOV V I	13
SHIGAY A YU	26	SMIRNOV A G	78	SUBASHIYEV V K	93
SHELAGIN A V	39	SMIRNOV G I	19,28	SUKHAREV S A	21
SHLEMIN YE B	26	SMIRNOV L S	98	SUKHIN S A	18
SHMUKHOV I P	93	SMIRNOV V A	34	SUKHININ G I	14
SHPEPELEV G V	43	SMIRNOV V G	33,78	SUKHORUKOV A P	77,78
SHERBITSKAYA L L	47	SMIRNOV V L	28	SUKHORUKOV YU P	93
SHEREMET'YEV D N	100	SMIRNOV V N	83	SUKHORUKOVA A K	38,78
SHESHUKOV V S	25	SMIRNOV V S	11	SULAKSHIN S S	15,19
SHEVANDIN V S	7	SMIRNOV V V	78	SULTANOV M A	107
SHVEL'KO A P	102	SMIRNOVA V I	97	SUNDUTOVICH G I	64
SHYNDLIN M A	85	SMOLENSKIY G A	93	SUSHILOV I V	74
SHYNYKMAN M K	5	SMOLYAK A N	68	SUVOROV A YE	94
SHILOV V B	8,93	SMUROVA N A	58	SUYOSHIEV V A	78
SHIROKOV A S	101	SOBOLEV A P	99	SVECHNIKOV G S	38
SHIROKOV S I	78	SOBOLEV N N	13	SVECHNIKOV N B	25
SHISHOV V I	53	SOBOLEV V S	73	SVERCHKOV YE I	78
SKLYAK A N	107	SODIN L G	71	SVERCHKOV YU YE	6,49
SHKOL'NIK M I	98	SOGOMONYAN S B	66	SVERDLOV B N	3
SHKUNOV V V	33	SOKOLOV A V	16	SVERDLOV L M	57
SELYAGIN M G	68	SOKOLOVA M A	94	SVICH V A	79
SELYCHKOV V I	78	SOKOL'SKIY M N	23	SVIRIDOV A V	16
SHMELEV I I	76	SOLOMATIN V S	98	SYPKO V P	78
SHMIT O A	87,94	SOLOUKHIN R I	18	SYRTLANOV M R	48
SHNITSER P I	75	SOLOV'YEV K N	65	SYSOYEV V K	14,77
SHPAK M T	9,39	SOLOV'YEV V S	105	SYVOROTKA I M	68
SHPILEVSKIY R V	58	SONIN A S	75	SZCZEPANSKI J	6
SHPOL'SKIY M R	102	SONIN A YU	14	SZCZERBAKOW A	3
SHPUNTOV A I	49	SOROKA A M	12,14	T	
SHTARK M B	78	SOROKA S A	62		
SHTEL'MAKH N I	47	SOROKIN YU M	55		
SHTYRBERG L S	52,54	SOROKO-NOVITSKIY N V	83	TABARCEA V	52
SHTURBIN A V	29	SOROKOVIKOV V N	29	TABIRYAN N V	39
SHTYRKOV YE I	98	SOSKIN M S	37	TALALAYEV N A	35
SHUBIN M V	4	SOSNIN V P	58	TAMANIS N YA	94
SHUL'GA A M	89	SOSNOVSKIY S A	4	TARAKANOV V V	35
SHUL'GA A YA	27	SOTIN V YE	78	TARAKANENKO V G	78
SHUMAY I L	89	SOVTUS V G	84	TARASIKIN S N	38
SHUMRIKOV V V	100	SOTTU V A	88	TARAMYUK O T	47
SHUSHAROV O YE	48	SPAZHAKIN V A	16	TARATENKO D A	74
SHUTOV S A	69	SPEKTOR I YA	96	TELEGIN G I	78
SHVEZHENDA EH L	65	SPEVAK I S	100	TELEGIN L S	78
SHVEYKIN V I	3	SPIRO A G	0,93	TELLE N	63
SIDOROV A S	106	STAFEEV V I	29	TECHENKO V S	29
SILICHEV O O	22	STAFEEVA E A	106	TEPLITSKIY E SH	5
SINONOV YU L	76	STAL'MAKHOVICH S I	48	TEREKHOV A S	89
SINONOVA M I	93	STANKEVICH YU A	100	TEREKHOVICH T P	83
SINONOVSKIY S N	100	STAPOR A	31	TETERIS YA A	88

TICHA B	82	USHENKO A G	58	VOYTSEKHUVSKIY V V	48
TIKY L	82	USKOV A V	43	VYATKIN V N	88
TIKHOVSKIY A A	25	USMANOV T	39		
TIKHOVSKIY A P	88	USOSKIN A I	1	W	
TIKHOVSKIY YE A	9	USTINOV B P	84	WALOCHA J	38
TIMOFEEV A L	48	UTALE R	66	WARDZINSKI W	91
TIMOFEEV YU P	26	UTENKOV B I	68	WENK J	33
TIMOSHCHENKO V N	181	UTOCHKIN K P	53	WERNICKE G	89
TITKOV V I	71	UTYAMYSHEV I R	68	WOLF L	38
TODOROV G TS	71	UTYAMYSHEV R I	79		
TODOROV T	68, 62, 85				
TODOROV T A	29	V		Y	
TOKMAKOV G P	8				
TOKUMOV YU M	14	VAKAR A G	93	YAFASOV A YA	98
TOLCHINSKIY L S	79	VAKAR A K	28	YAKHIND E I	35
TOLKACHEV V A	88	VAKULENKO O V	85	YAKOVLENKO S I	42
TOLSTOYATENKO A V	2	VALAKH M YA	94	YAKOVLEV V I	88
TOLSTOYATOV O I	28	VALOV P M	24	YAKUBOVICH O V	96
TOMIN V I	94	VARAKIN V N	31	YANKINA I B	78
TOMSONS YA YA	71	VARSHAVSKIY YU I	79	YANSON M L	64, 65
TONCHEV A A	97	VASILENKO L S	36, 79	YANUSHEVSKIY N I	98
TOPKOV A N	79	VASILIU V	69	YANUSHKEVICH V A	99
TOPLICEANU C	65	VASILYAK L M	14	YANYUK V I	88
TOPORKOVA I A	75	VASIL'YEV G K	28	YAKASHYUNAS R	68
TORCHINSKAYA T V	5	VASIL'YEV L A	13	YAKEMENKO YU I	55
TOROPOV A K	29	VASIL'YEV V S	39	YAROSRETSKIY I D	24
TOTIYEVA T	84	VASIL'YEVA I A	79	YAROSLAVSKIY A I	95
TREGUB D P	58	VASIL'YEVA N V	186	YAROSLAVSKIY L P	187
TRIBEL'SKIY M I	97	VASIN V V	68	YASINSKIY V M	18
TRONINA M A	68	VASSILEV YA T	97	YASSIYEVICH I N	24
TROPSHENKO A YU	23	VAVILOV V S	85	YASTREBOV A A	67
TRUSHIN S A	13	VAYSBURD D I	2	YATSENKO O B	83
TSAM'KOV V A	84	VAYTKUS YU	68	YATSEKOVICH G M	74
TSEKHOMSKIY V A	64	VDOVIN V A	55	YAVOKHIN A N	96
TSESNEK L S	78	VEDENYEV A A	16, 17	YAVORSKIY A I	69
TSIGAN' I (SEE CIGANY I)		VEDENYEV S I	43	YAZBURSKIS B I	46
TSOY T G	181	VEDENOV A A	96	YEDNERAL N V	95, 96
TSUKANOV A A	72	VERBOVSKIY V I	31	YEFIMOV YU YA	94
TSUKANOV S V	81	VERESHCHAGIN I P	79	YEFREMOV V A	15
TSVETAYEV K N	185	VINOGRADOVA N S	7	YEGOROV I M	88
TSVETKOV TS I	84	VINOKUR M A	68	YEGOROV V D	86
TSVIRKO M P	65	VINOKUROV N A	45	YEGOROV V N	25
TSYBIZOV V D	187	VITEK A	184	YELINKOVA YE (SEE JELINKOVA H)	
TUCHIN V V	12	VITLINA R Z	86	YELINSON M I	37
TURHVATULLIN F KH	183	VITRIKHOVSKIY N I	98	YELISEYEV P G	3
TUL'YEV A V	98	VLADIMIROV M V	57	YELISSEYEV S I	9
TUMANOV B N	4	VLASENKO N A	2	YEMELIN V YA	94
TUMANOVA A N	75	VLASOV D V	57	YEMETS A K	99
TUMASYAN A S	34	VLASOV G K	15	YEMTSEV V V	98
TUMAYKIN A M	11	VLASOV R A	58	YEPIFANOV M S	85
TURIYANSKIY YE A	48	VLASOV V A	58	YEPISIRIN V A	79
TURKEVICH YU G	23	VLCEK M	82	YEREMEYEV G I	25
TURSUNOV M A	63	VOBIAN J	58	YERMACHENKO V M	18
TURYANITSA I D	38	VODOP'YANOV K L	7	YESIPOV V S	56
TYAPKIN V A	52	VOINOV A M	11	YEVTYUKHIN N V	18
TYURIKOV D A	28	VOLCHENOK V I	13	YEVTYUSHENKOV A M	56
TYURIN YU M	188	VOLKOV A YU	16, 17	YUGOV V I	12, 14
U		VOLKOV S V	65	YUNDEV D N	79
UDACHIN YU M	8	VOL'NOV M I	88	YUNOVICH A E	91
UDREA E	15	VOLOVETS L D	81, 96	YUNCHISHIN V YA	59
UDREA V M	15	VOROB'YEV L YE	29	YUSKESBELIEVA L G	51
UGLOV A A	96, 99	VORONIN V P	4	YUSUBOV F M	56
UMBETOV A U	88	VORON'KO YU K	5, 87		
URIN B M	14	VORONKOV V V	27	Z	
URINSON A S	79	VORONKOVA G I	27		
URIYSKIY YU I	79	VOSTRIKOV A A	65	ZABELIN V A	88
USHAGINA V I	62	VOYNOVSKIY A S	17	ZADKOV V N	89
USHAKOV A N	79	VOYTKOV A I	71	ZAGORODNYUK V T	88
		VOYTSEKHUVSKIY A V	86	ZAKAENOV N P	183

ZAKHARCHENKO V M	59
ZAKHARENKO L F	94
ZAKHAROV B V	58
ZAKHAROVA I S	38
ZALETAYEV S P	63
ZALETIN V M	89
ZAPASSKIY V S	86
ZAPOROZHCHENKO R G	38
ZAPOROZHCHENKO V A	38
ZARETSKIY D F	43, 86
ZARIPOV M M	98
ZASLAVSKIY G M	36
ZASTROGIN YU F	88
ZAVETOVA M	82
ZAVIL'GEL'SKIY G B	46
ZAVIN I YE	96
ZAVODOV YU K	75
ZAVOROTNYY S I	21
ZAYATS A YU	64
ZAYTSEV L M	88
ZAYTSEV M I	27
ZAYTSEVA G G	39
ZAYTSEVA M G	98
ZEL'DOVICH B YA	39
ZELENIN V N	95
ZEMLYANOV A A	56
ZEMSKOV G G	81
ZHABITENKO N K	25
ZHABOTINSKIY M YE	103
ZHAROV V P	81
ZHDANOK S A	18
ZHDANOV B V	36, 37
ZHDANOV G S	93
ZHELUDEV N I	36, 37
ZHILEYKIN YA M	57
ZHIRNOV A V	71
ZHITOMIRSKAYA D I	97
ZHIVOTOV V X	20
ZHMAKIN A I	81
ZHUKOV N D	3, 4
ZHUKOVA YE O	58
ZHUKOVSKIY YU G	41
ZHUZHUKALO YE V	95
ZIL'BERBRAND YE L	81
ZINCRENKO N I	68
ZINEVICH YE M	23
ZINOV'YEV A V	95
ZLATIN N A	81, 96
ZLOKAZOV V B	39
ZMEYeva L N	46
ZOLOTOV YE M	28, 38, 58
ZON B A	63
ZUBKOV V I	63
ZUBKOV YU N	68, 81
ZUBOV B V	27
ZUYEV V A	86
ZUYEV V S	9
ZUYEVA T V	86
ZUYKOV V A	49
ZVEREV G M	71
ZVEREVA G M	81
ZYUBRIK A I	68

